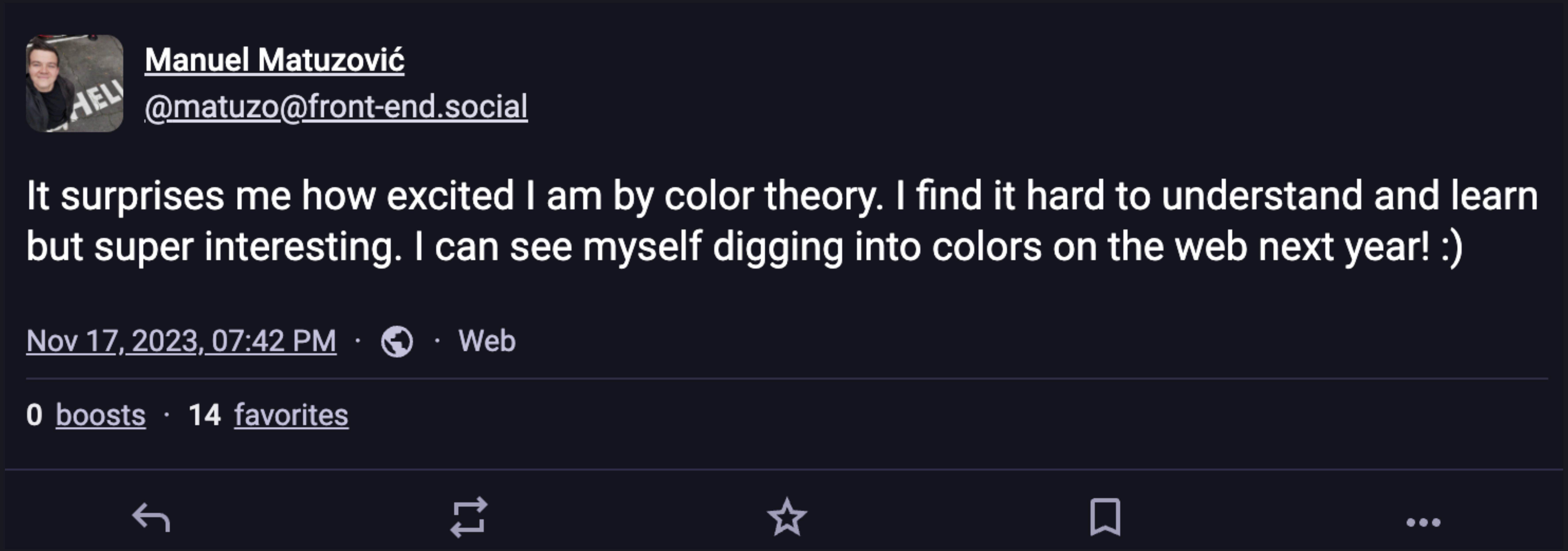
Color in CSS

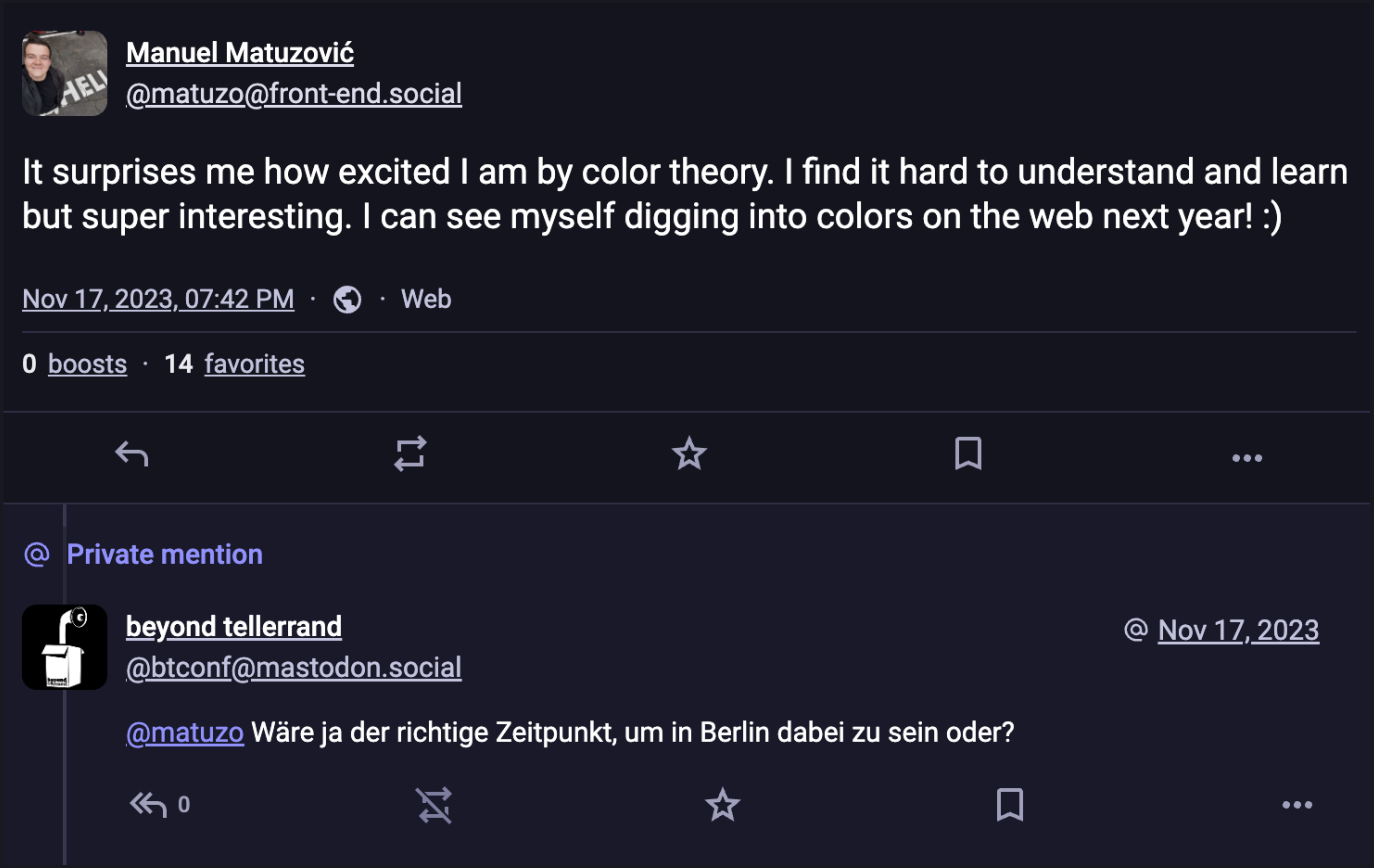


Manuel Matuzović
@matuzo@front-end.social

It surprises me how excited I am by color theory. I find it hard to understand and learn but super interesting. I can see myself digging into colors on the web next year! :)

Nov 17, 2023, 07:42 PM · · Web

0 boosts · 14 favorites



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0 boosts · 14 favorites

@ Private mention

beyond tellerrand @ Nov 17, 2023
@btconf@mastodon.social

@matuzo Wäre ja der richtige Zeitpunkt, um in Berlin dabei zu sein oder?

Advanced Modern CSS Masterclass

YOUR INSTRUCTOR
Manuel Matuzović

Workshop, 5×2h + Q&A • Mon & Tue, June 24 – July 2 2024
09:00 – 11:30 AM PT • 18:00 – 20:30 CET • Check your time zone ⏰

clamp, :is, :where, min, max, lab, lch, oklab, oklch, cascade layers, container queries, logical properties, has, svh, dvh, lvh, font-pallets, subgrid… The amount of changes and new features we have seen in CSS the last few years is quite impressive.

In this workshop, Manuel will teach you how these features work, in what cases you can best use which option, what the best tools are, and much more.

smashingconf.com/online-workshops/workshops/modern-css-manuel-matuzovic container style queries

display-p3

container queries

nesting

scoping

color spaces

logical properties

viewport units

view transitions

gamuts

scroll-driven animations

relative color syntax

:is() / :where()

@property

color-mix()

:has()

subgrid

min() max() clamp()

@media range syntax

lch()/oklch()

lab()/oklab()

s of syntax

transition-behavior

@starting-style

color fonts

initial-letter

text-wrap

color()

sin() cos() tan()

light-dark()

container style queries

display-p3

container queries

nesting

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color spaces

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relative color syntax

color-mix()

lch()/oklch()

lab()/oklab()

color fonts

color()

light-dark()

@media (color-gamut)

@media (forced-colors)

@media (prefers-contrast)

@media(prefers-reduced-transparency)

hue interpolation

perceptual uniform

accent-color

gamut mapping

gamut clipping

conic-gradients

color-scheme

space-separated syntax

currentColor

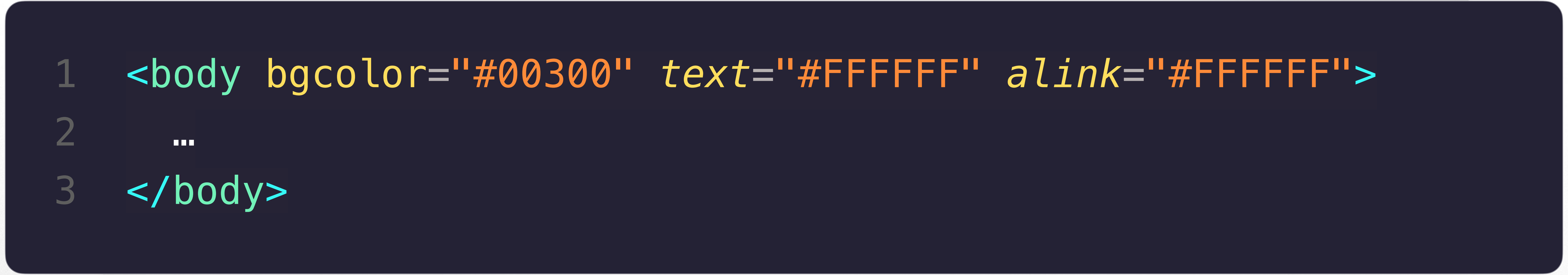
system colors

transparent

named colors

hwb()

…



```html
<body bgcolor="#00300" text="#FFFFFF" alink="#FFFFFF">
  …
</body>
```

000	300	600	900	C00	*F00*
003	303	603	903	C03	*F03*
006	306	606	906	C06	F06
009	309	609	909	C09	F09
00C	30C	60C	90C	C0C	F0C
00F	30F	60F	90F	C0F	*F0F*
030	330	630	930	C30	F30
033	333	633	933	C33	F33
036	336	636	936	C36	F36
039	339	639	939	C39	F39
03C	33C	63C	93C	C3C	F3C
03F	33F	63F	93F	C3F	F3F
060	360	660	960	C60	F60
063	363	663	963	C63	F63
066	366	666	966	C66	F66
069	369	669	969	C69	F69
06C	36C	66C	96C	C6C	F6C
06F	36F	66F	96F	C6F	F6F
090	390	690	990	C90	F90
093	393	693	993	C93	F93
096	396	696	996	C96	F96
099	399	699	999	C99	F99
09C	39C	69C	99C	C9C	F9C
09F	39F	69F	99F	C9F	F9F
0C0	3C0	6C0	9C0	CC0	FC0
0C3	3C3	6C3	9C3	CC3	FC3
0C6	3C6	6C6	9C6	CC6	FC6
0C9	3C9	6C9	9C9	CC9	FC9
0CC	3CC	6CC	9CC	CCC	FCC
0CF	3CF	6CF	9CF	CCF	FCF
0F0	3F0	*6F0*	9F0	CF0	*FF0*
0F3	*3F3*	*6F3*	9F3	CF3	*FF3*
0F6	*3F6*	6F6	9F6	*CF6*	*FF6*
0F9	3F9	6F9	9F9	CF9	FF9
0FC	*3FC*	6FC	9FC	CFC	FFC
0FF	*3FF*	*6FF*	9FF	CFF	*FFF*

```css
body {
  background-color: #003300;
}
```

Untitled-1 @ 200% (RGB/8) *

Document

Canvas

W 960 px X 0 px
H 800 px Y 0 px

Resolution: 72 pixels/inch

Mode RGB Color

8 Bits/Channel

Fill White

Rulers & Grids

Pixels

Properties
Adjustments
Libraries
Color
Swatches
Gradients
Patterns
Properties
Adjustments
Libraries
Layers
Channels
Paths
Import image
Generate image

Untitled-1 @ 200% (RGB/8) *

Document

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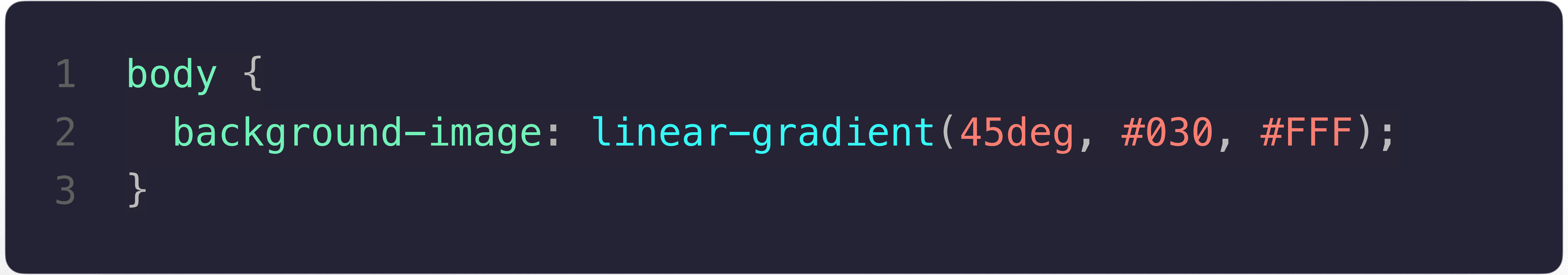
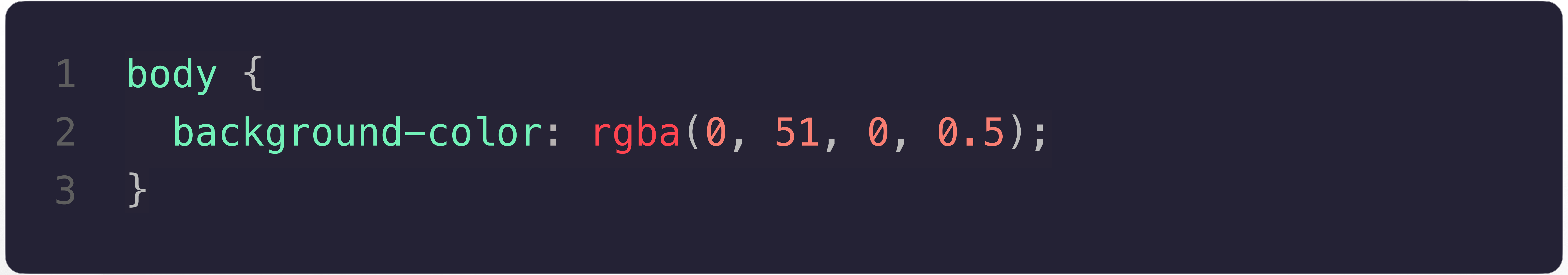


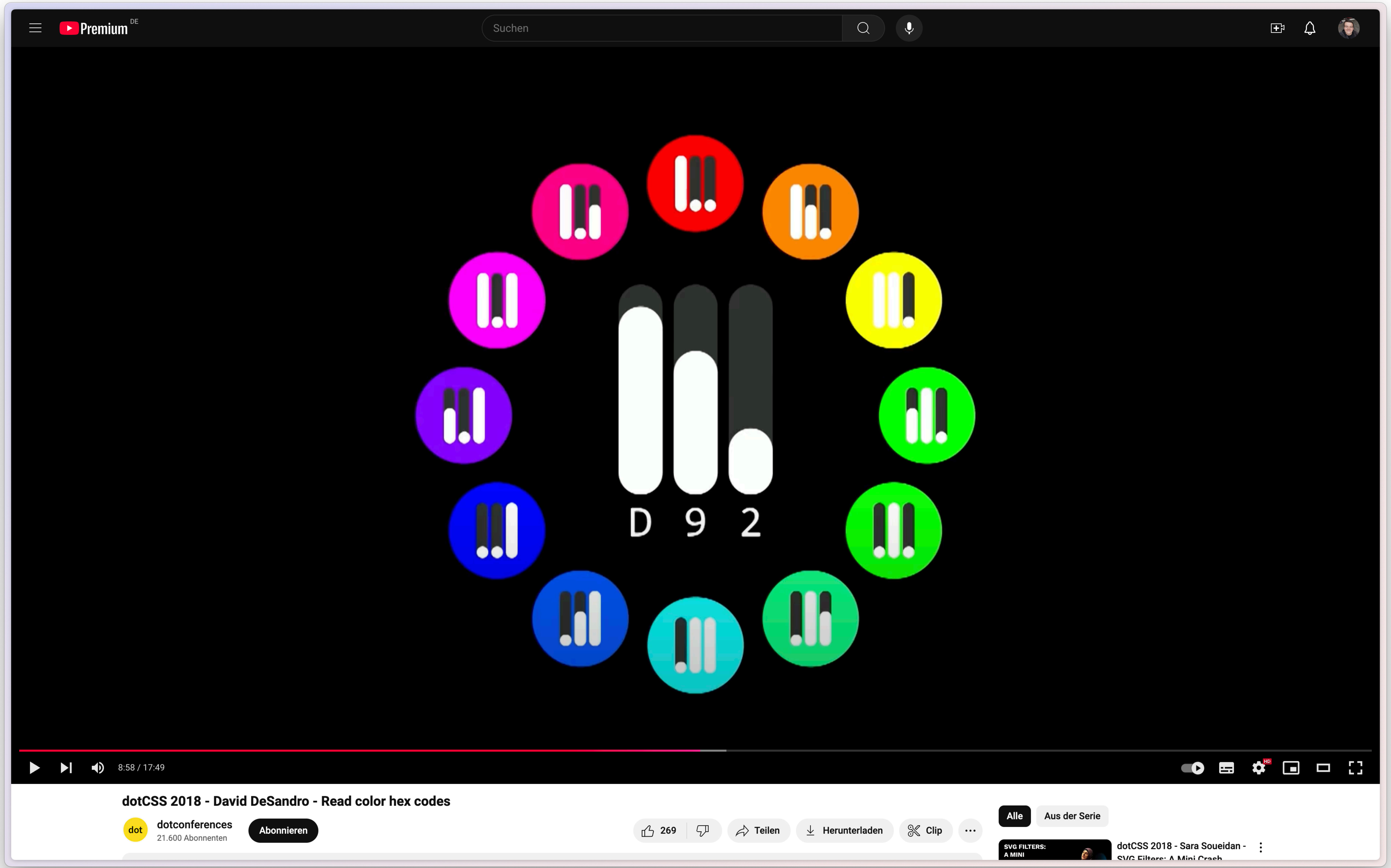
```css
body {
  background-image: linear-gradient(45deg, #030, #FFF);
}
```



```css
body {
  background-color: rgba(0, 51, 0, 0.5);
}
```

#D04A6D

rgb(208, 74, 109)

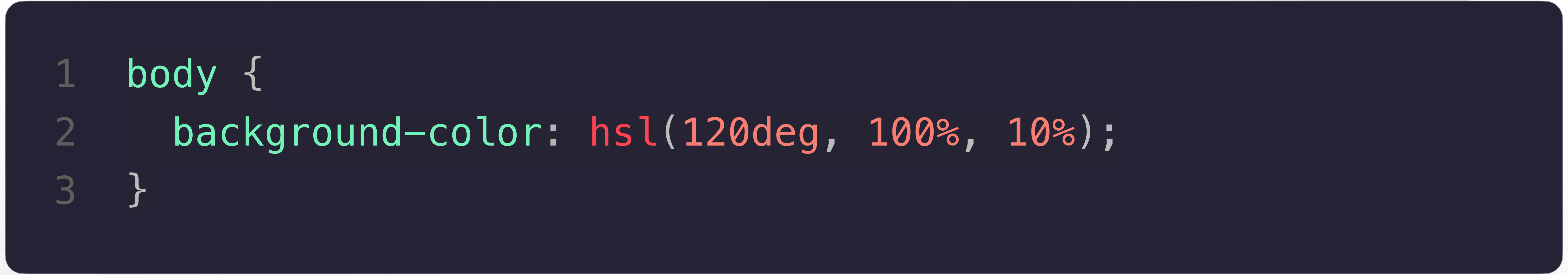


dotCSS 2018 - David DeSandro - Read color hex codes

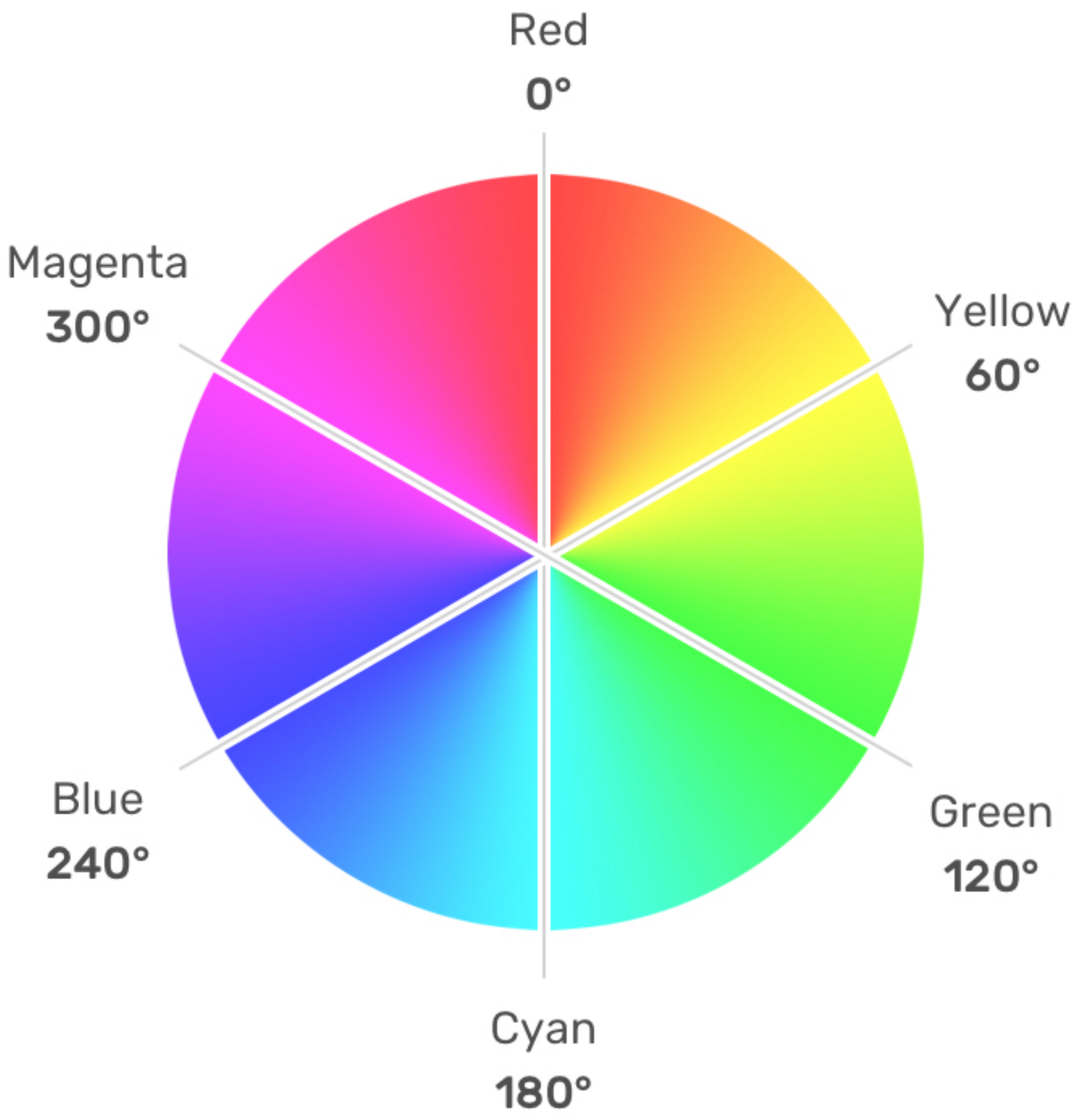
dotconferences
21.600 Abonnenten

dotCSS 2018 - Sara Soueidan - SVG Filters: A Mini Crash

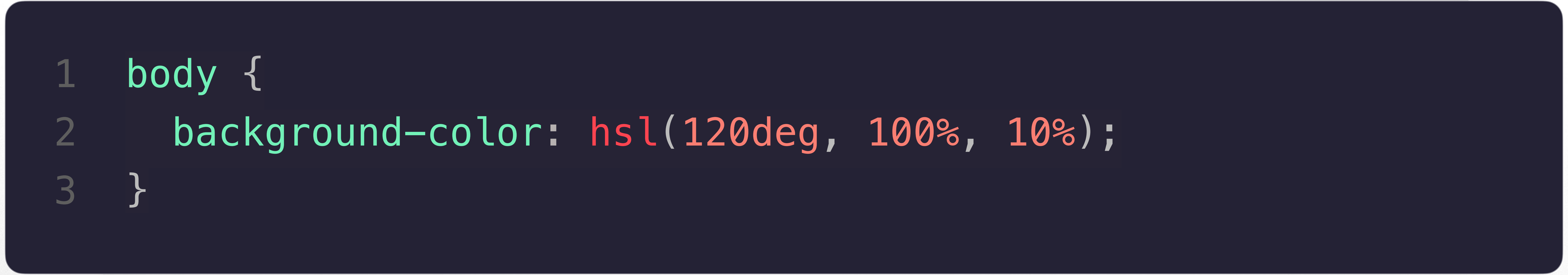
youtu.be/eqZqx6lRPe0



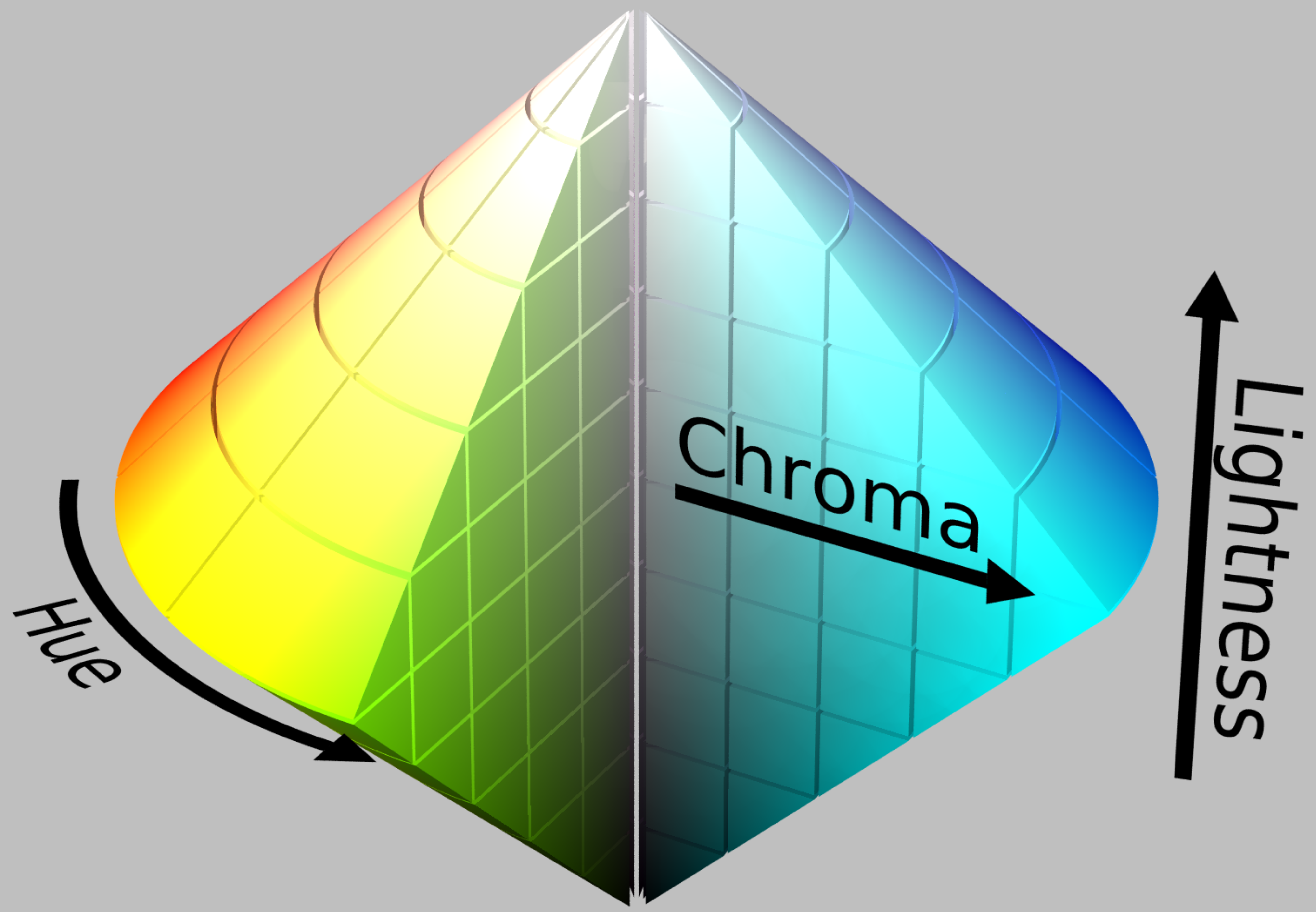
```css
body {
  background-color: hsl(120deg, 100%, 10%);
}
```



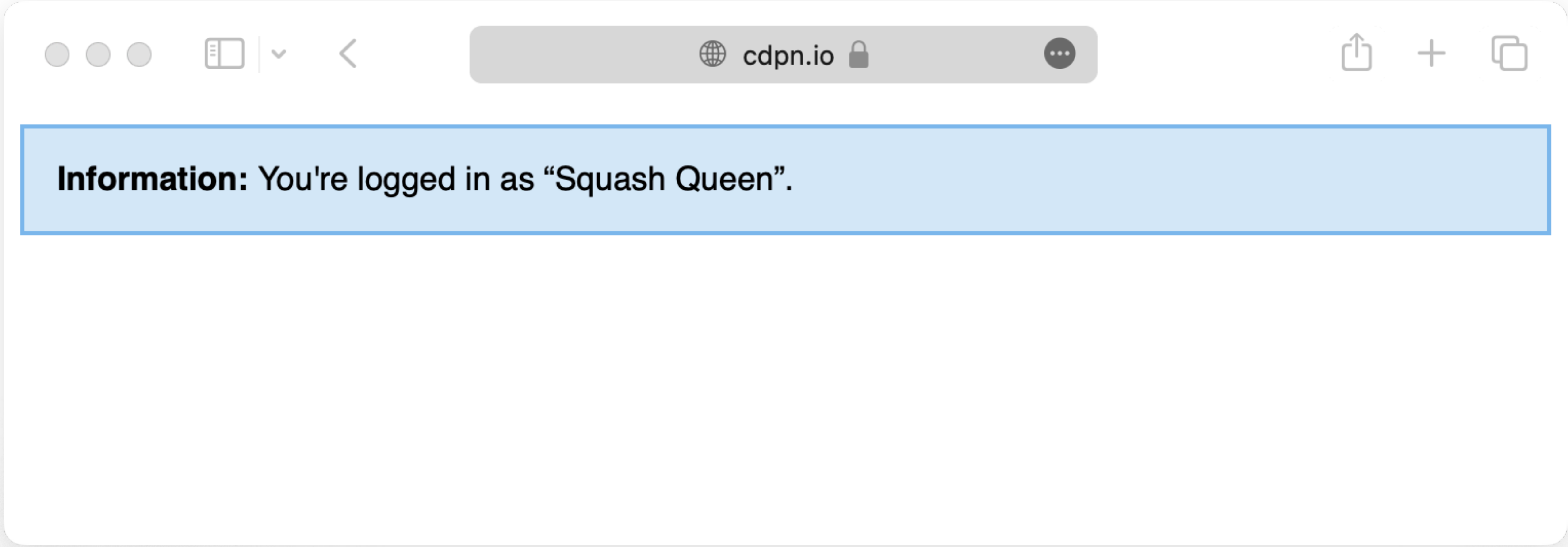
smashingmagazine.com/2021/07/hsl-colors-css



```css
body {
  background-color: hsl(120deg, 100%, 10%);
}
```

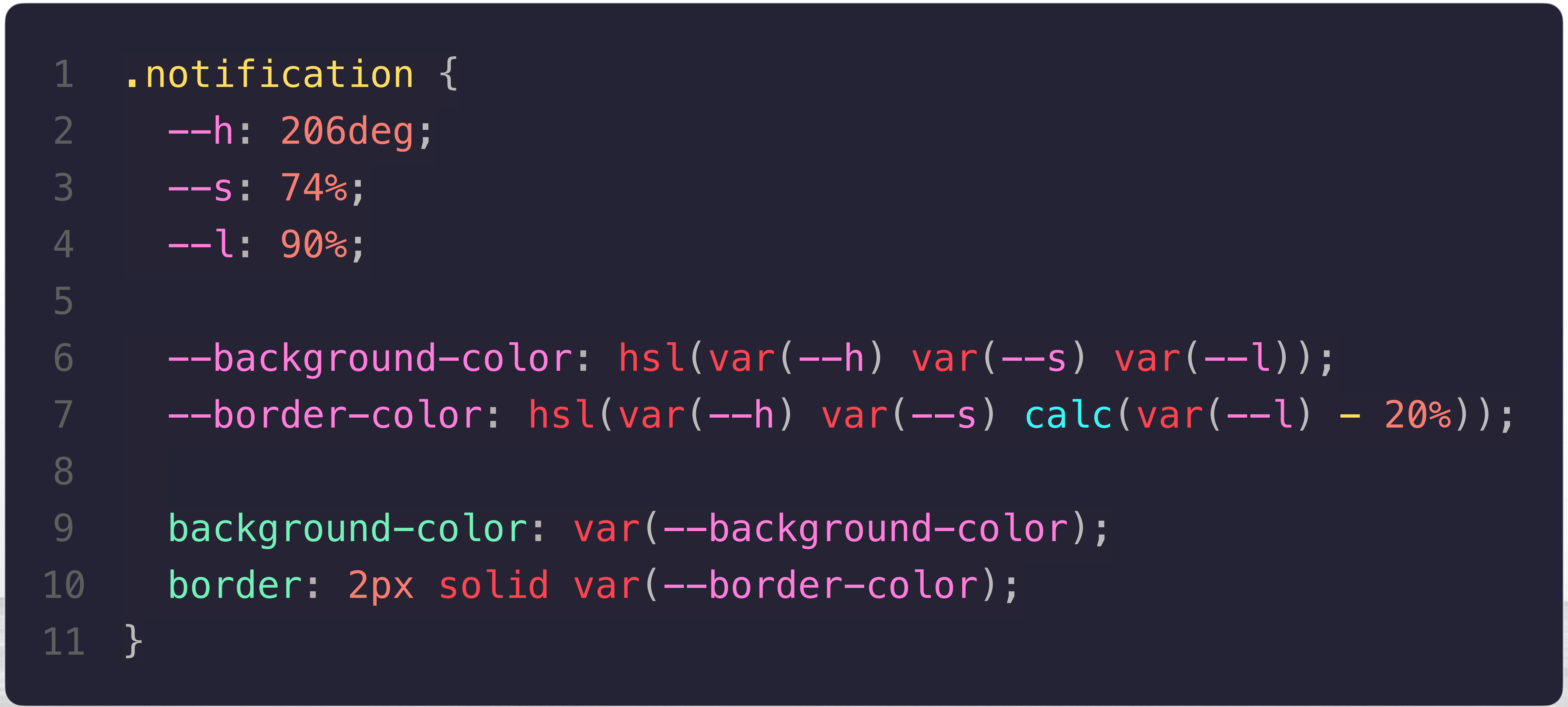


en.wikipedia.org/wiki/HSL_and_HSV

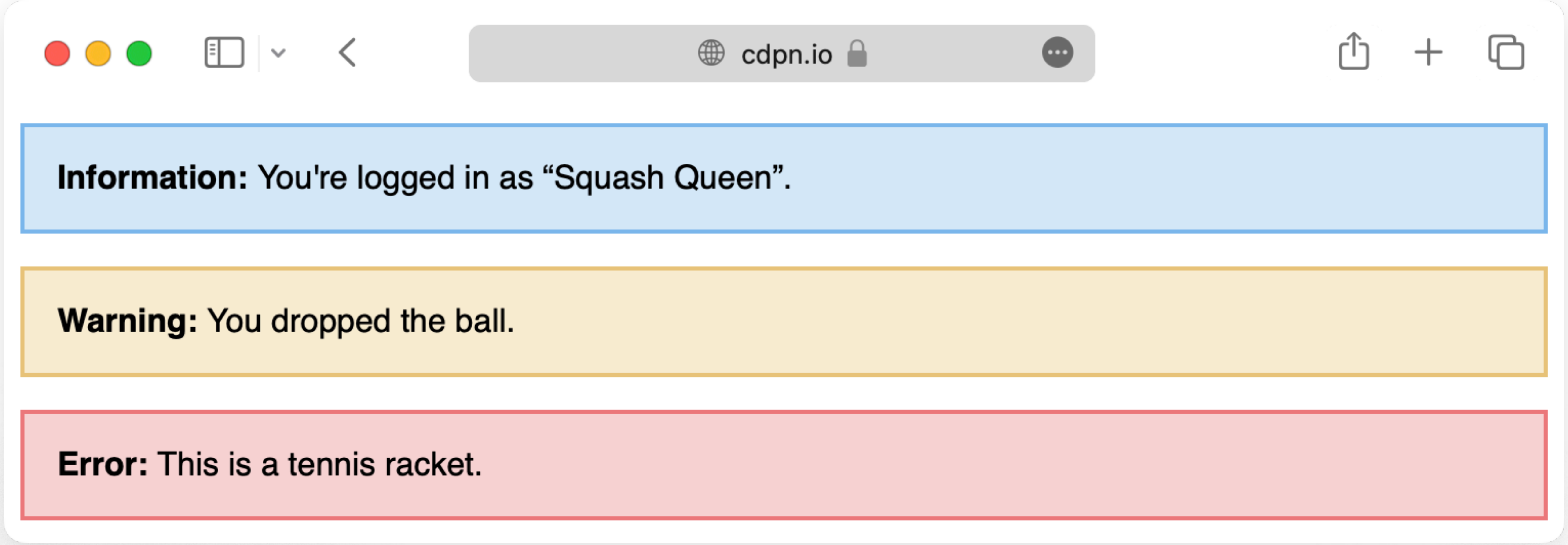


Information: You're logged in as “Squash Queen”.

```css
.notification {
  --background-color: hsl(206deg 74% 90%);
  --border-color: hsl(206deg 74% 70%);

  background-color: var(--background-color);
  border: 2px solid var(--border-color);
}
```



```css
.notification {
  --h: 206deg;
  --s: 74%;
  --l: 90%;

  --background-color: hsl(var(--h) var(--s) var(--l));
  --border-color: hsl(var(--h) var(--s) calc(var(--l) - 20%));

  background-color: var(--background-color);
  border: 2px solid var(--border-color);
}
```



Information: You're logged in as “Squash Queen”.

Warning: You dropped the ball.

Error: This is a tennis racket.

```html
<div role="status" class="notification" style="--h: 40deg;">
  <strong>Warning:</strong> You dropped the ball.
</div>

<div role="status" class="notification" style="--h: 0deg;">
  <strong>Error:</strong> This is a tennis racket.
</div>
```

SUCKS!

GAMUT

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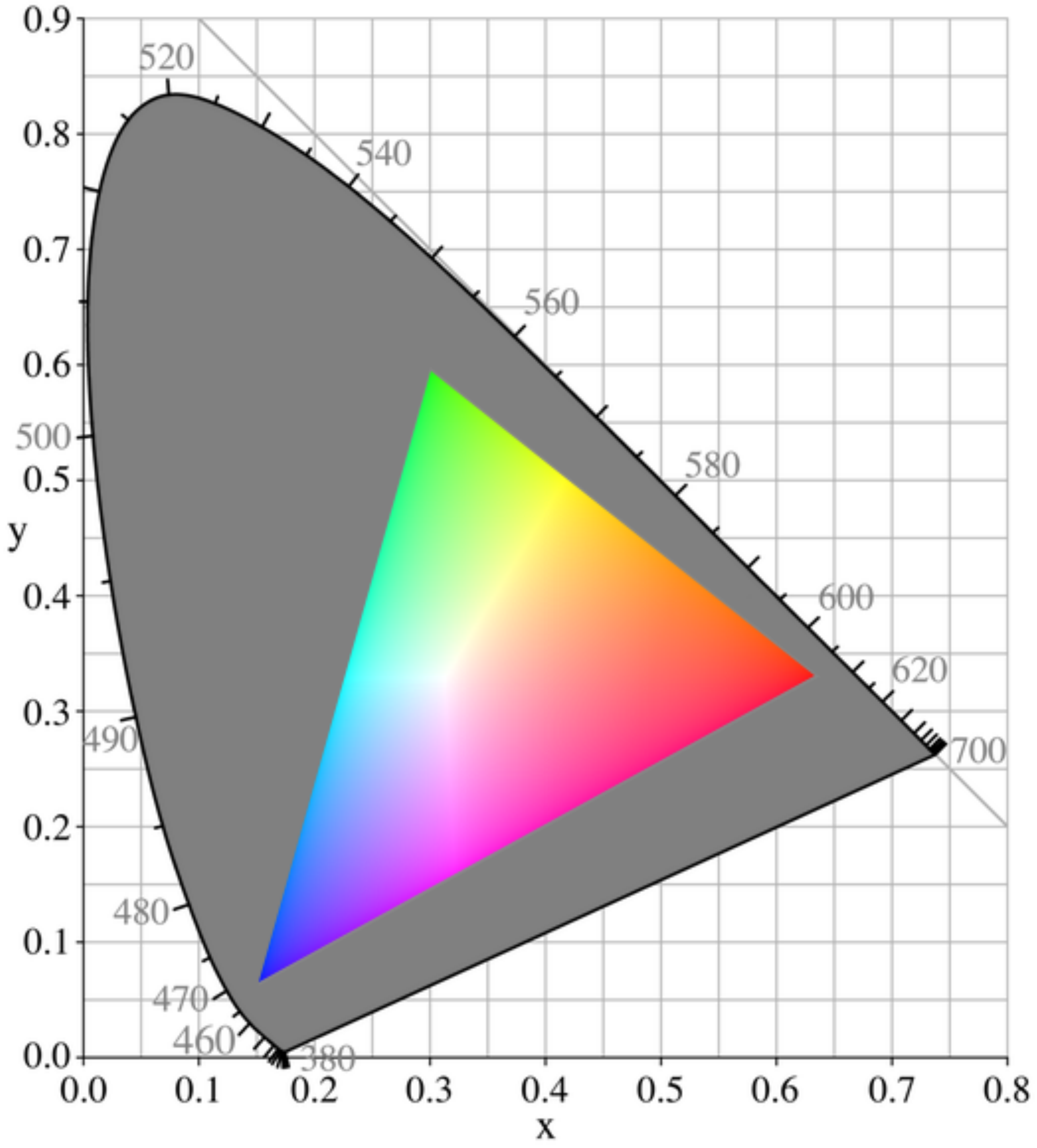
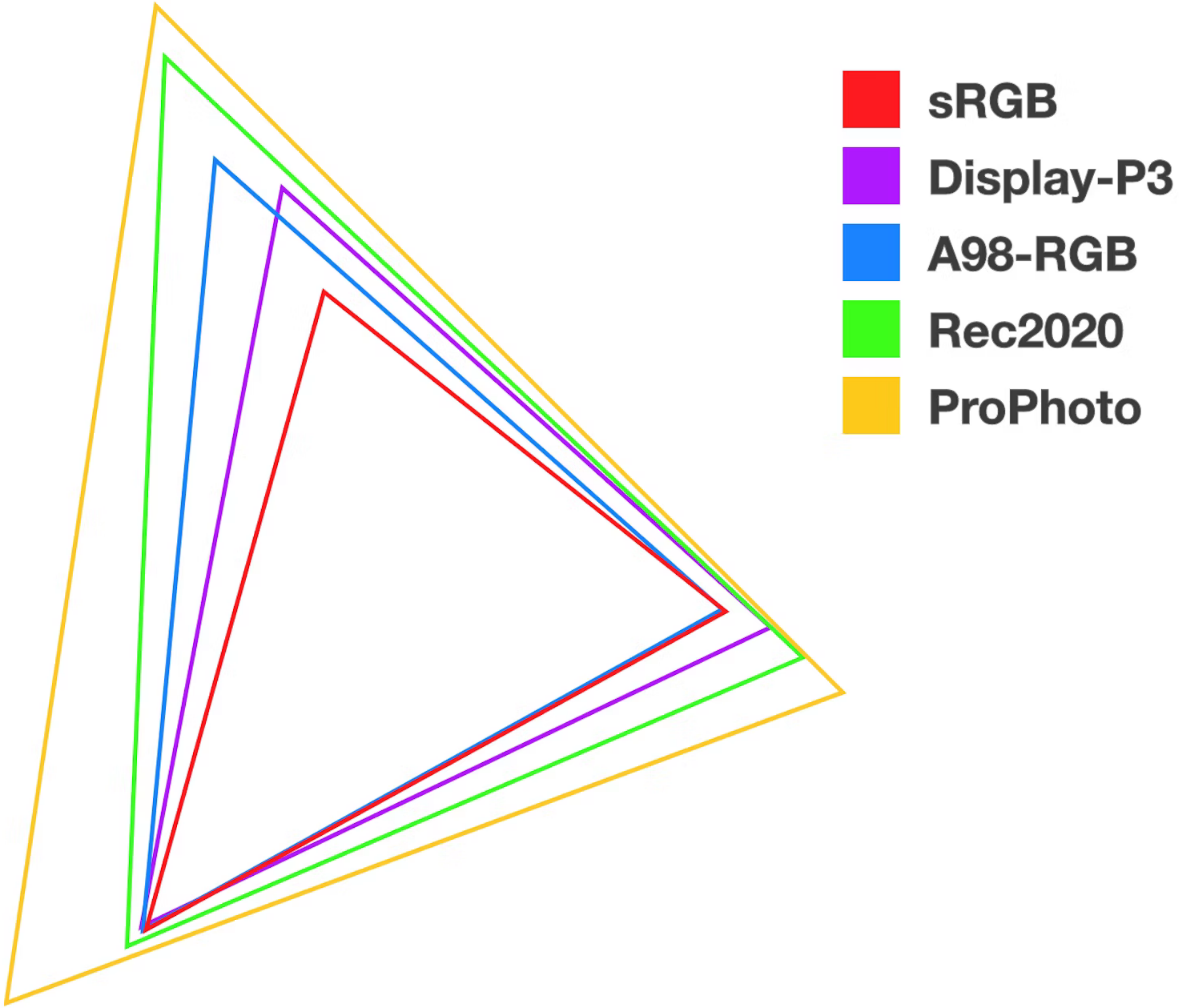
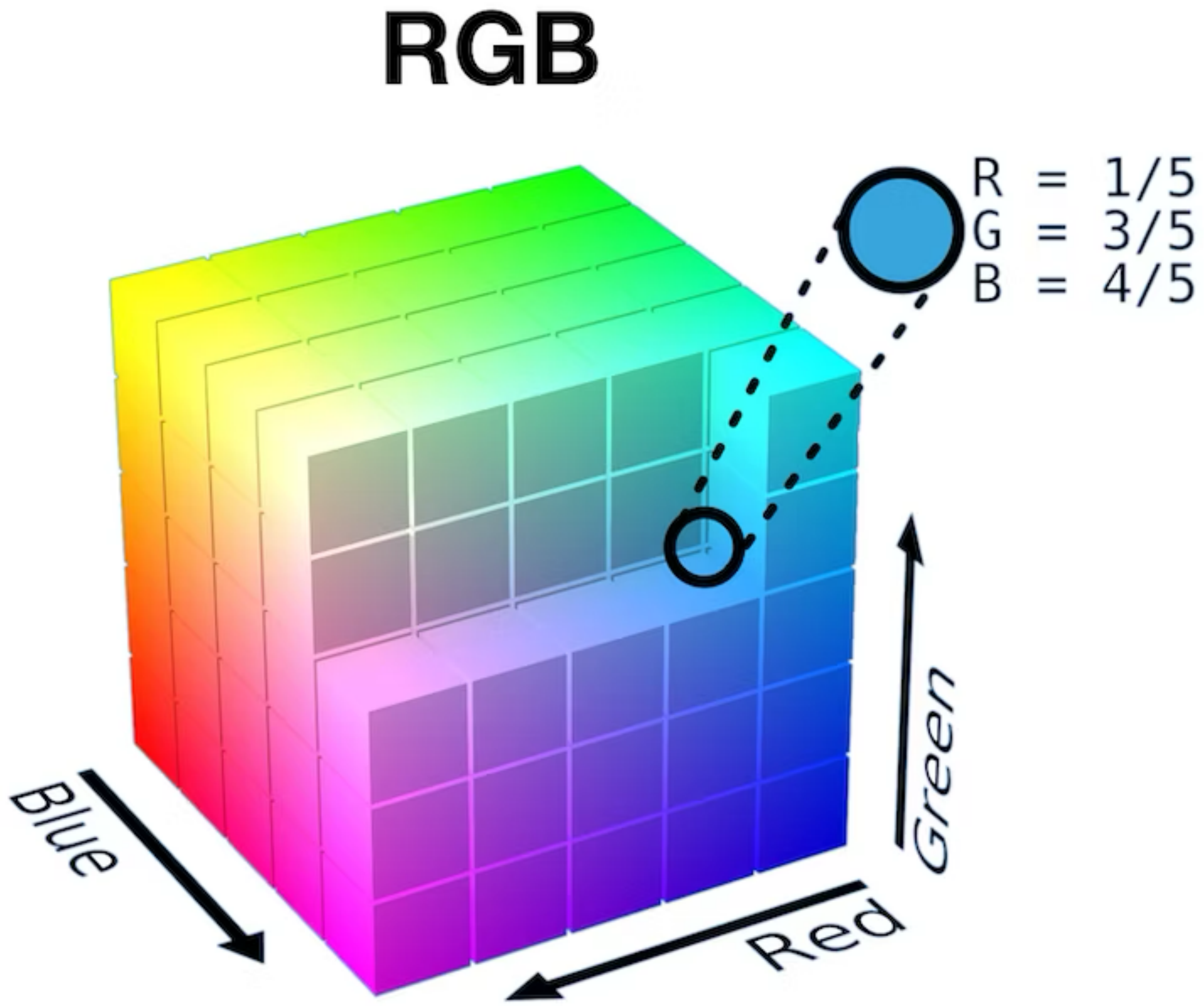


en.wikipedia.org/wiki/Gamut



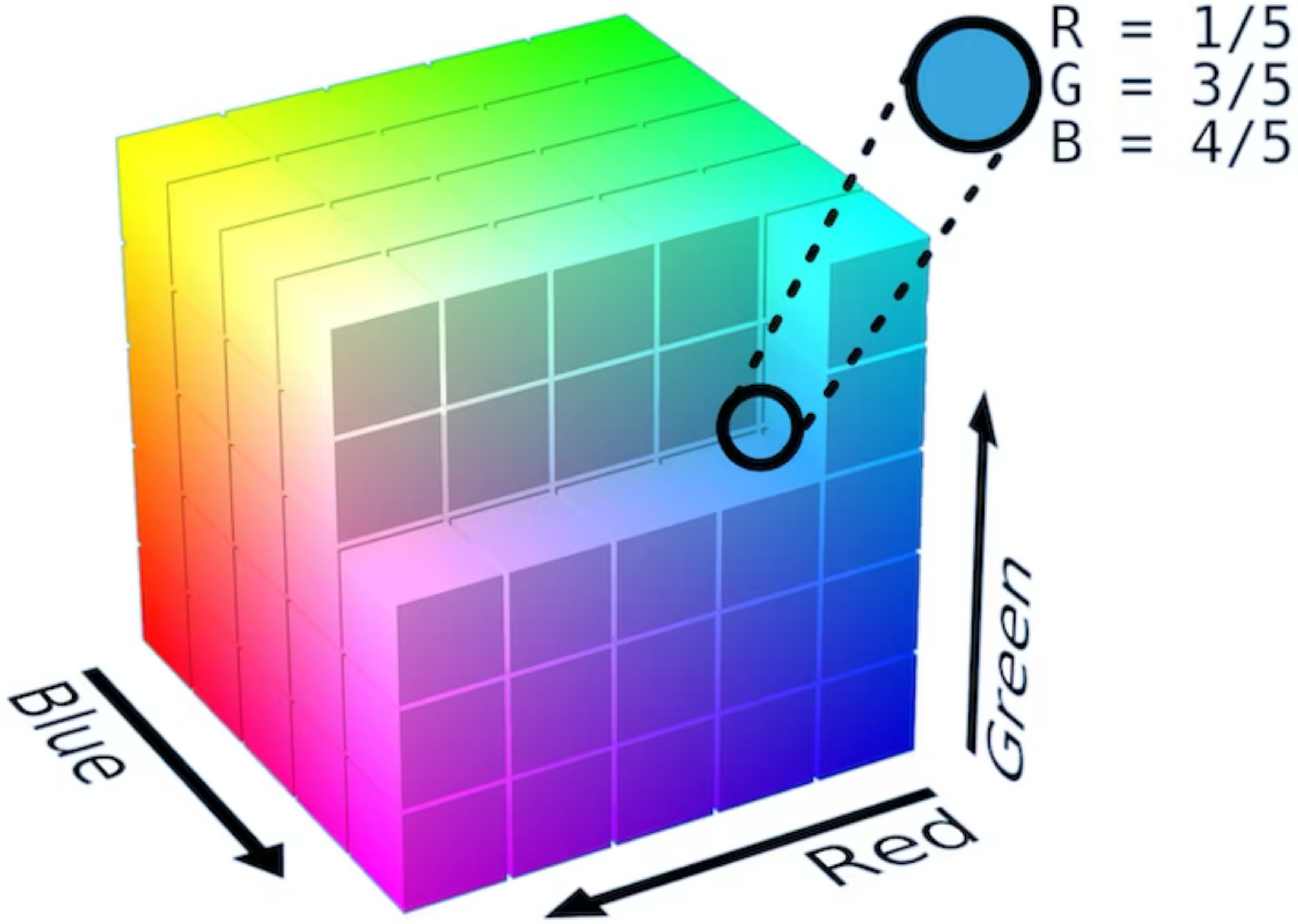
developer.chrome.com/docs/css-ui/access-colors-spaces

COLOR SPACES

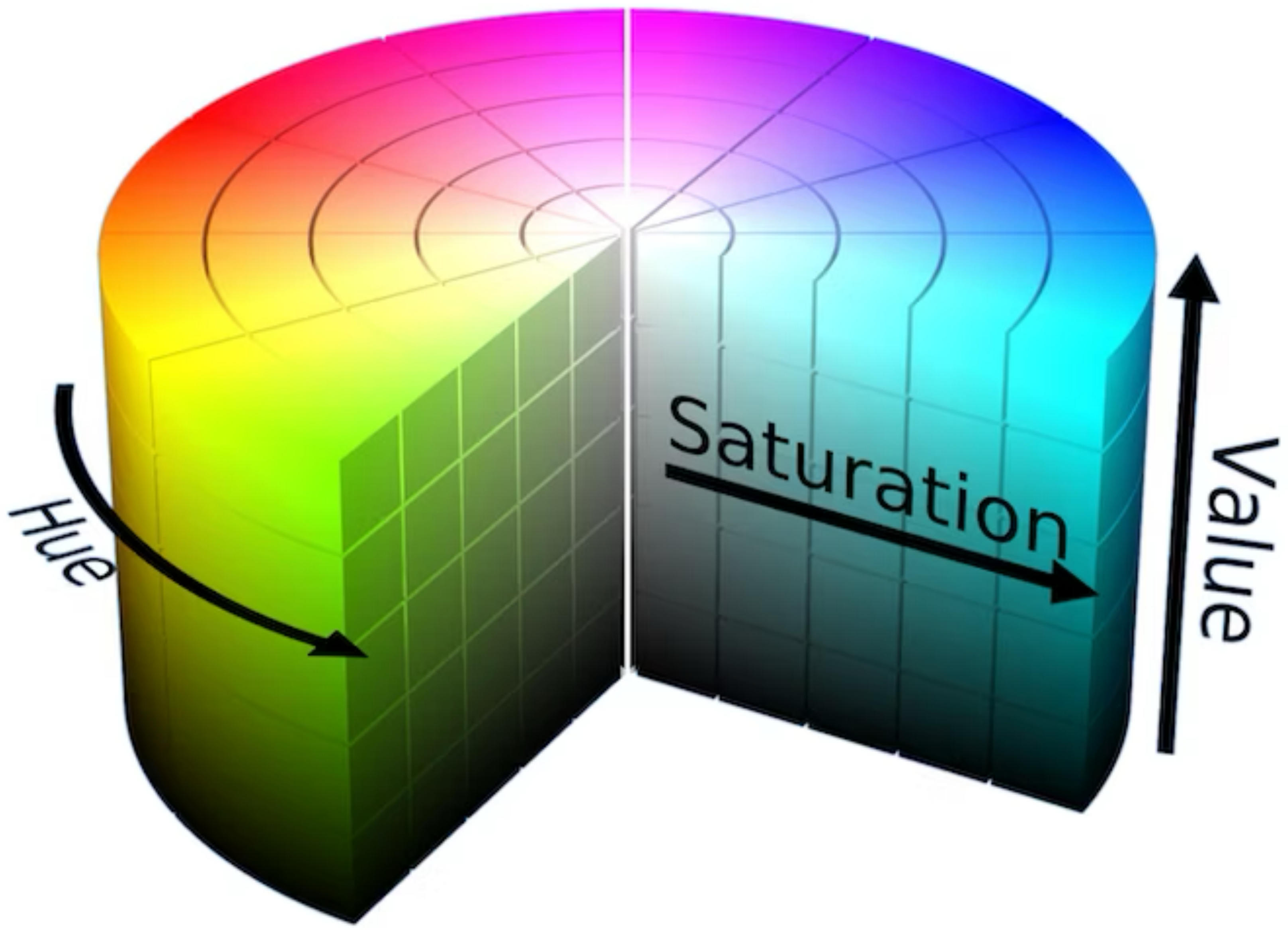


en.wikipedia.org/wiki/HSL_and_HSV

RGB



HSL



en.wikipedia.org/wiki/HSL_and_HSV

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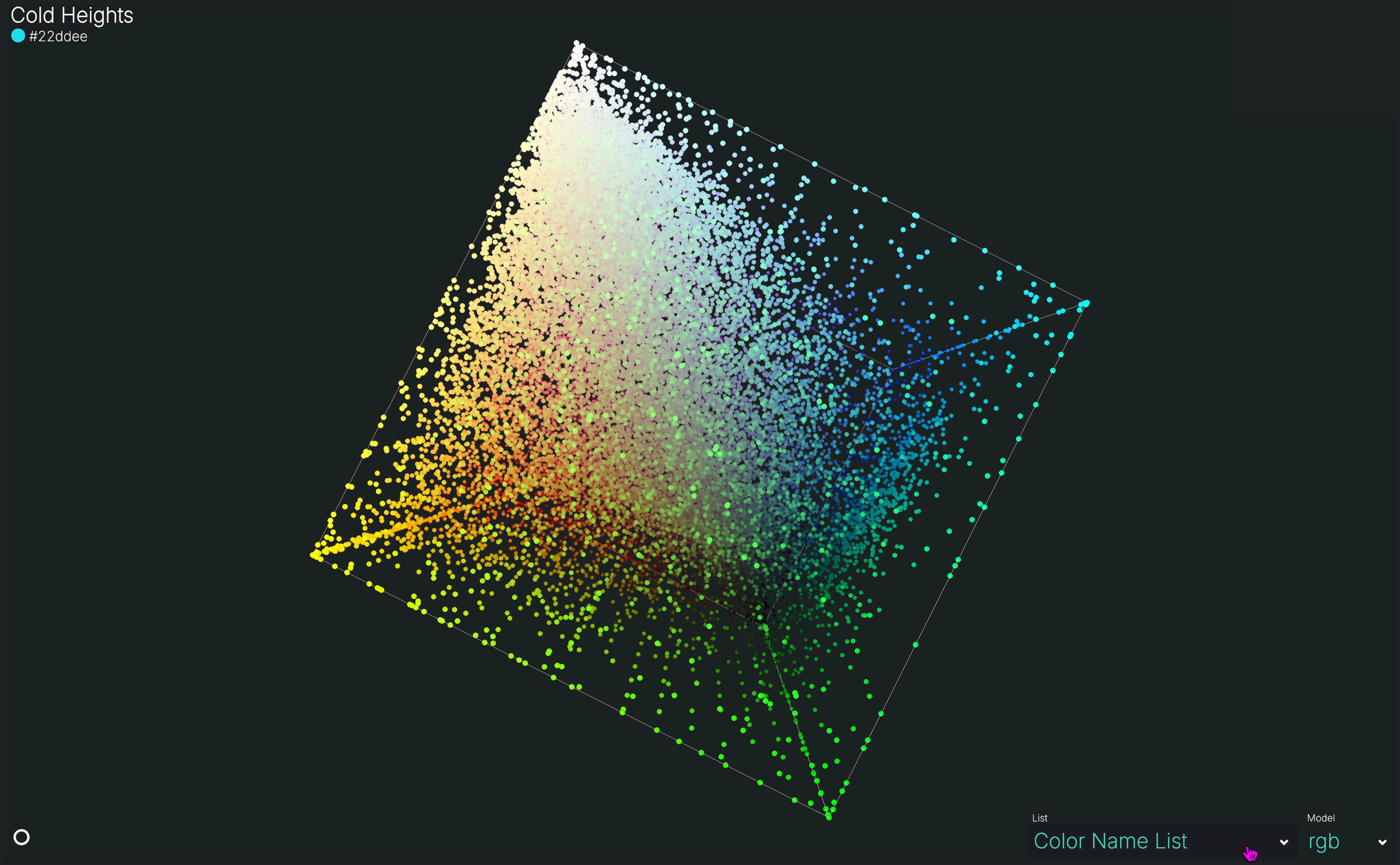
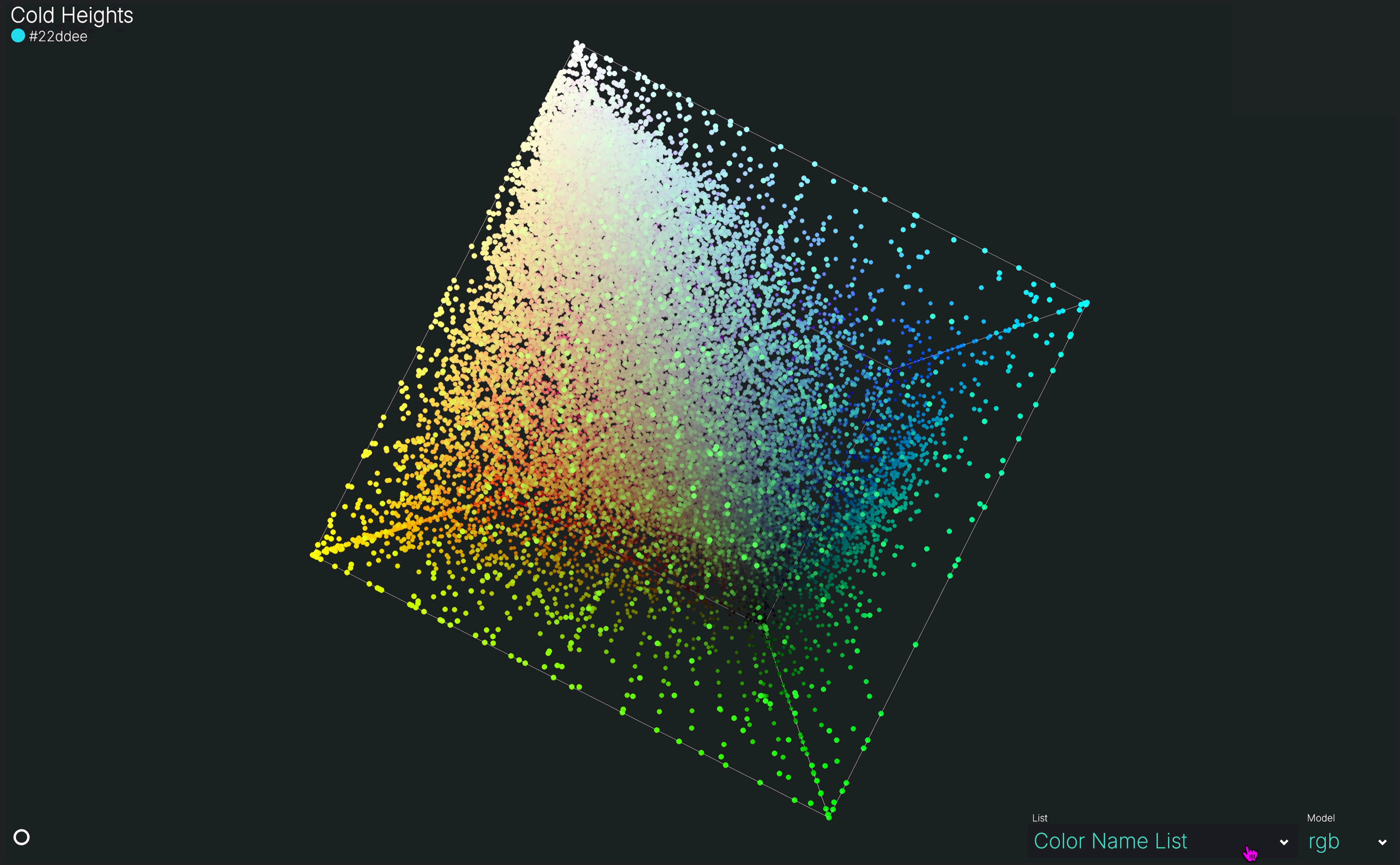


Cold Heights
● #22ddee

List
Color Name List

Model
rgb

cdpn.io/pen/debug/zdgXJj



Cold Heights

● #22ddee

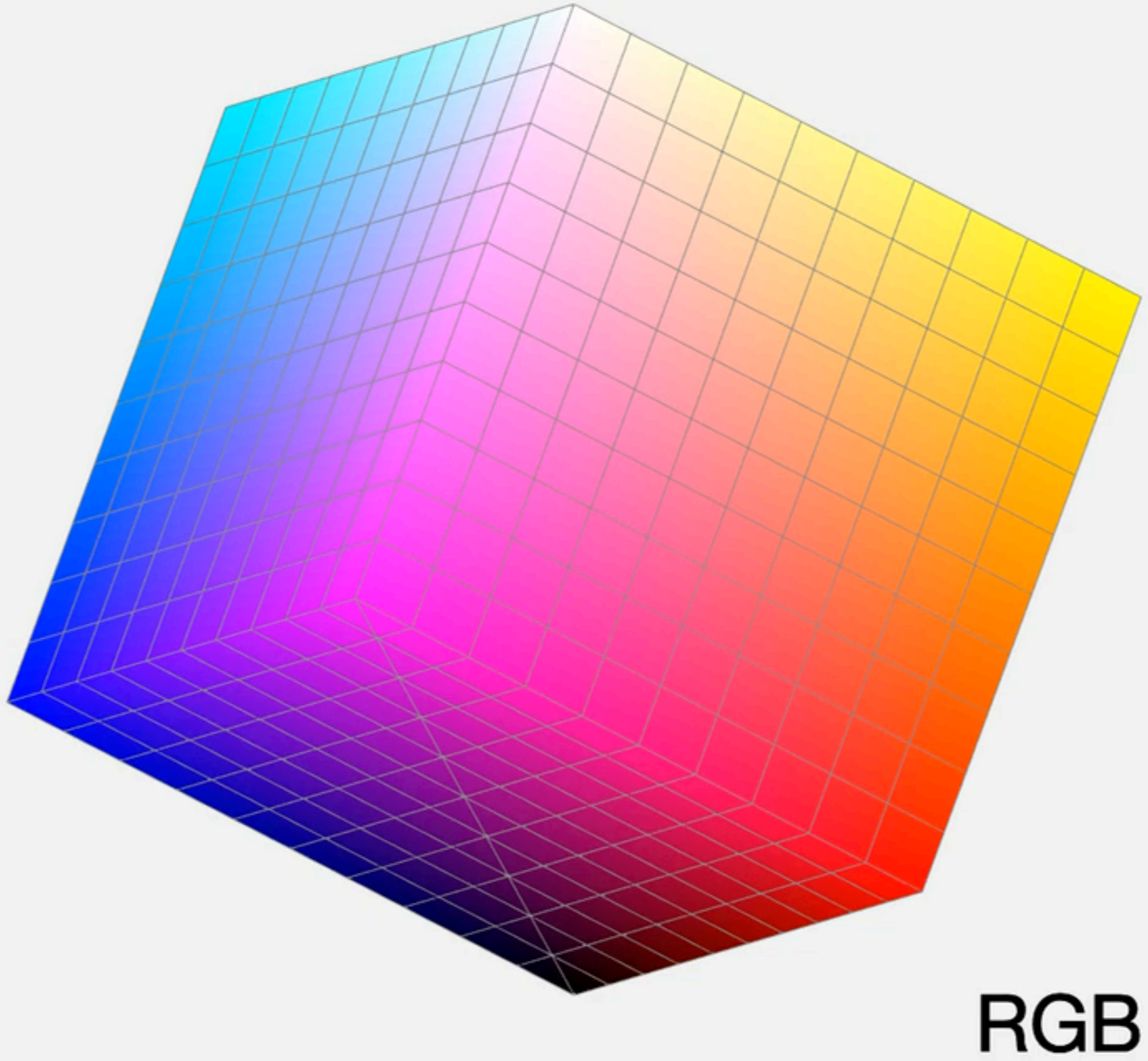
List

Color Name List ⌄

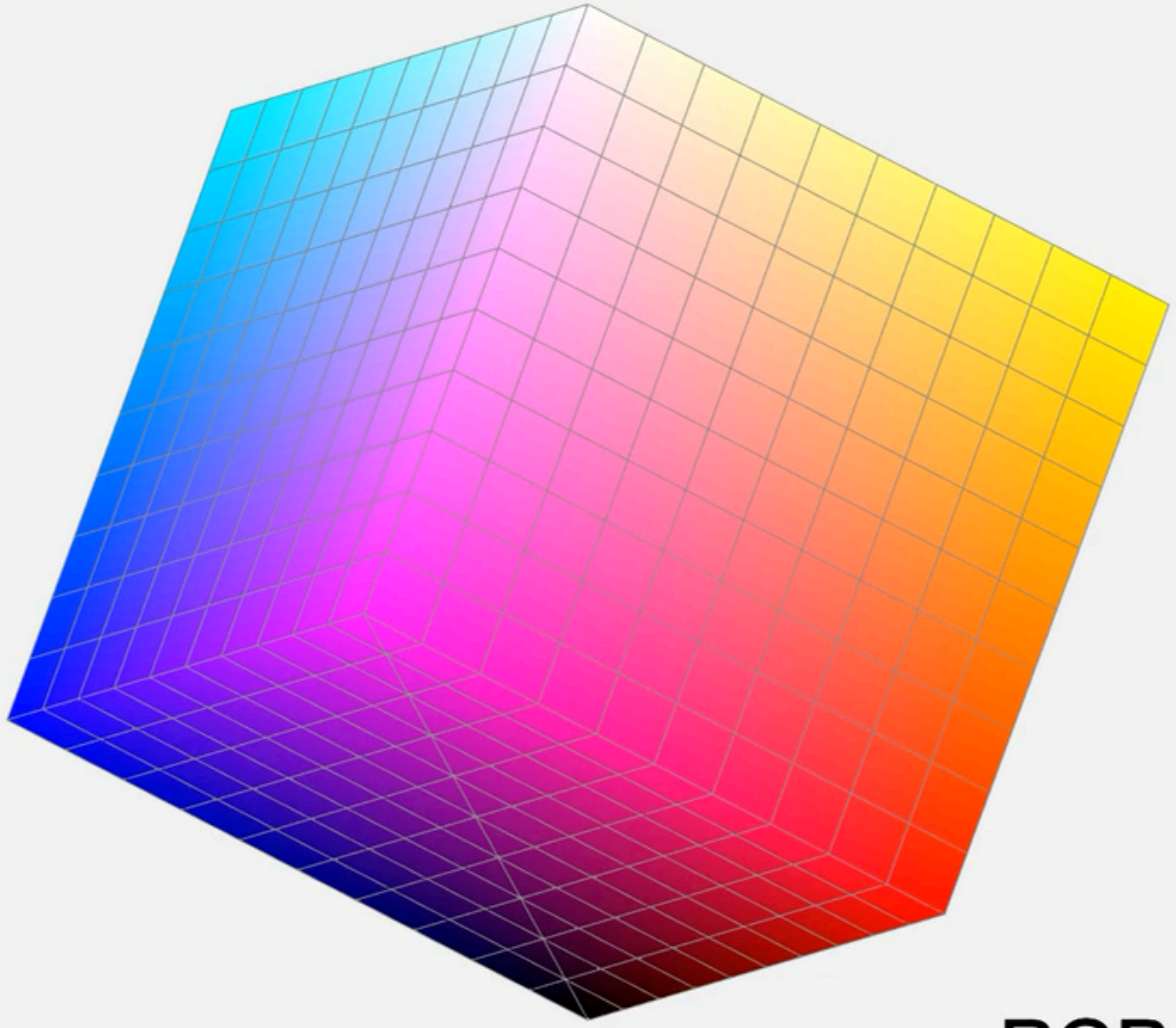
Model

rgb ⌄

cdpn.io/pen/debug/zdgXJj

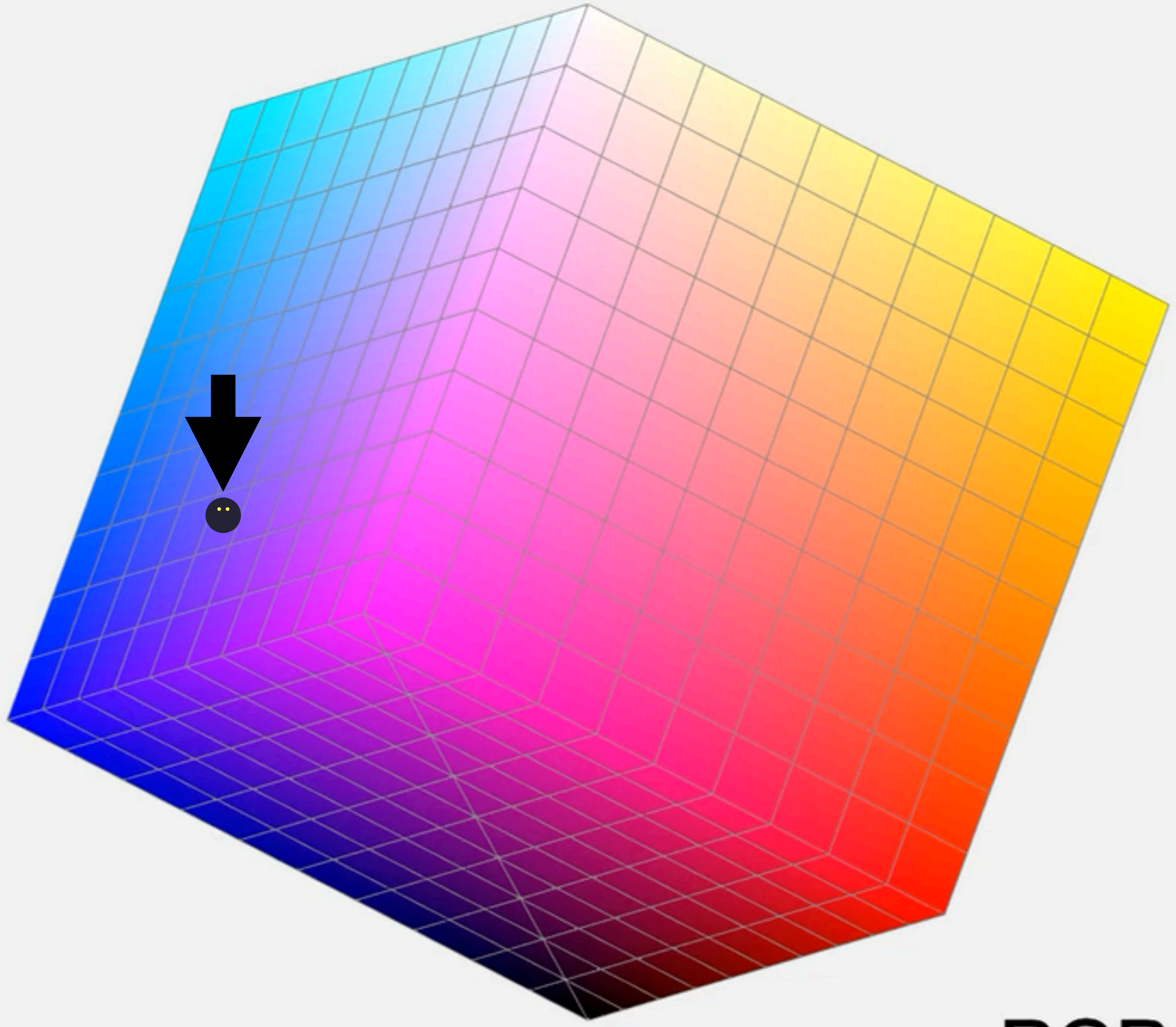


commons.wikimedia.org/wiki/File:Visible_gamut_within_CIELAB_color_space_D65_whitepoint_mesh.webm



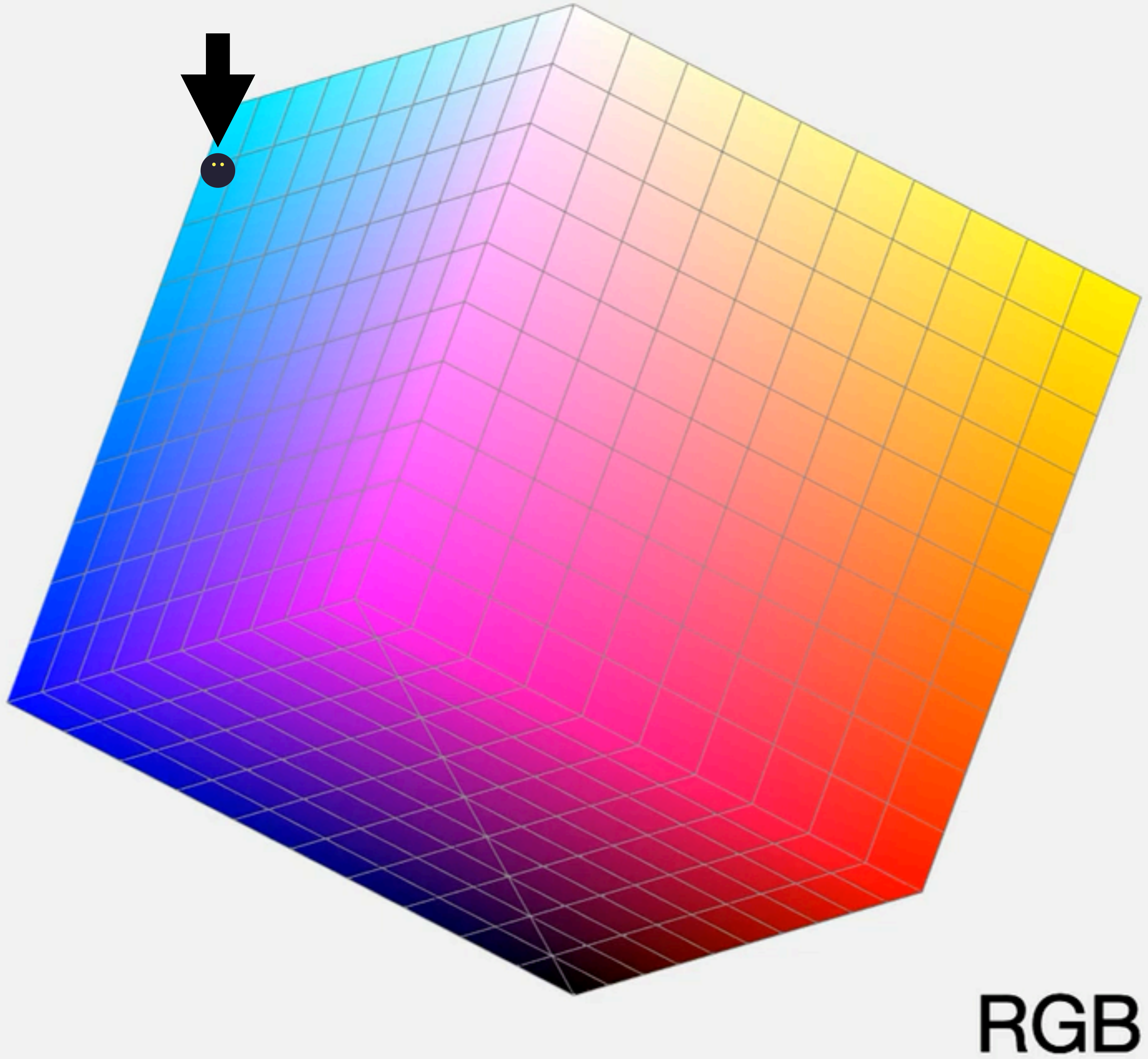
RGB

commons.wikimedia.org/wiki/File:Visible_gamut_within_CIELAB_color_space_D65_whitepoint_mesh.webm

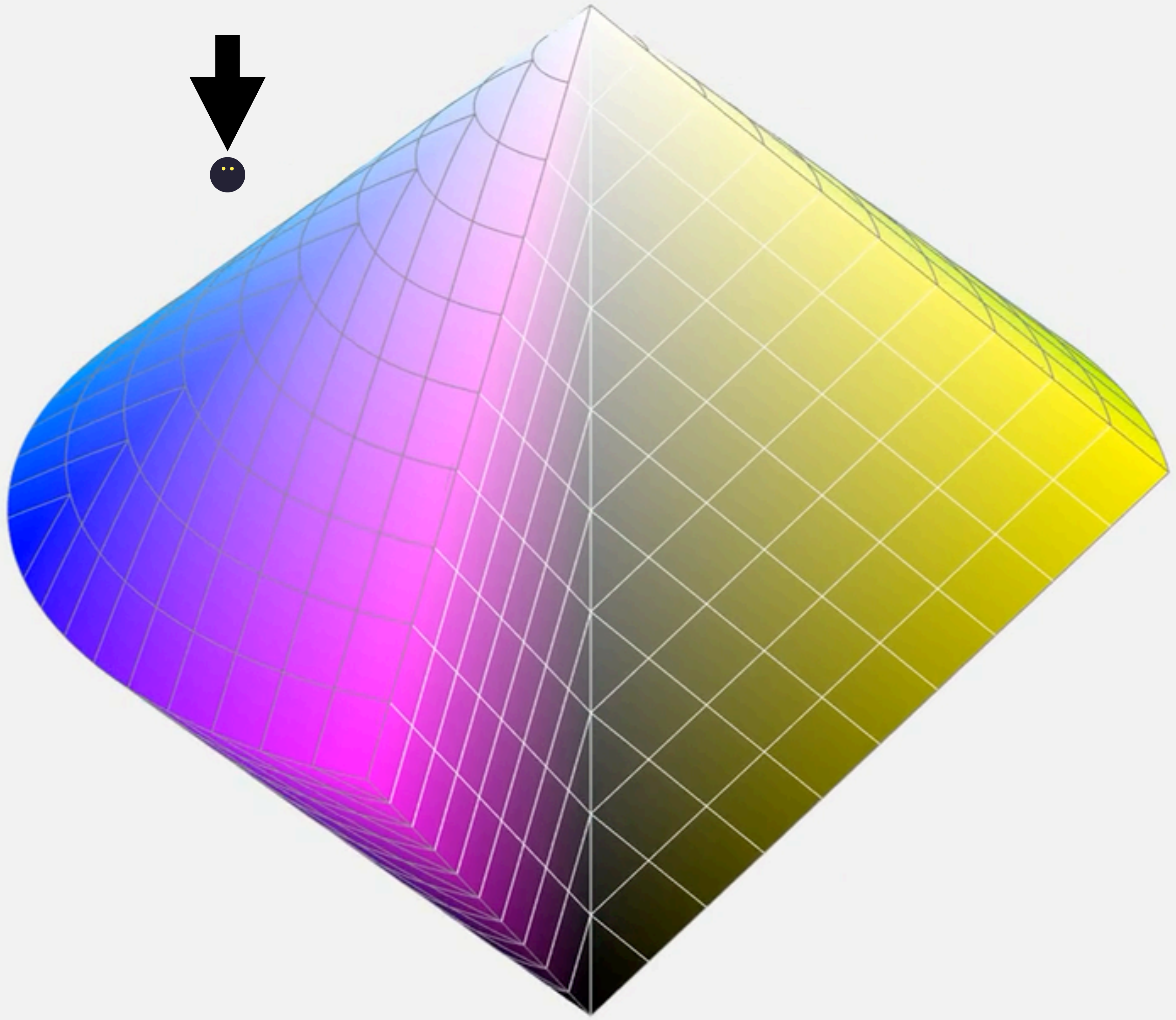


RGB

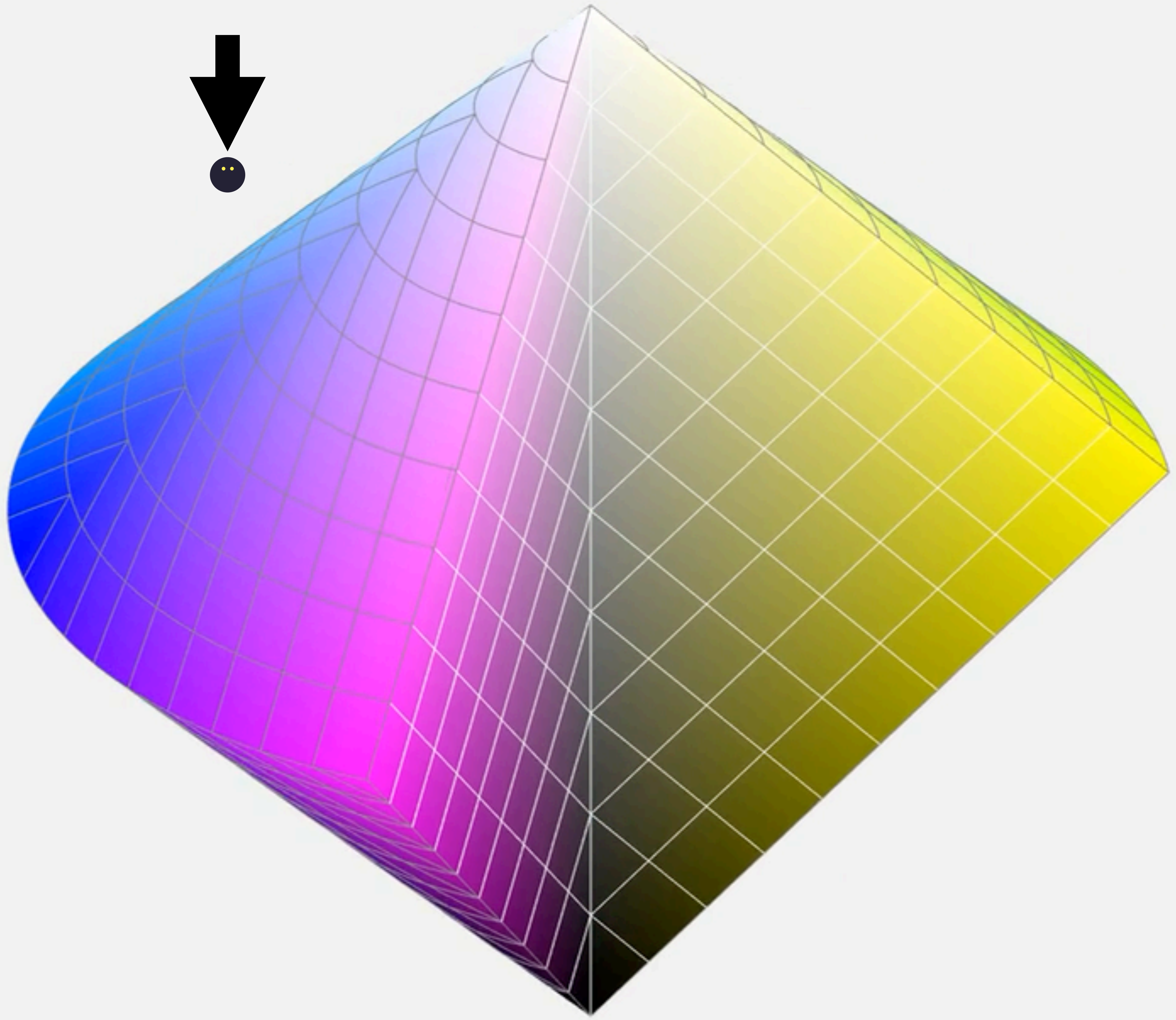
commons.wikimedia.org/wiki/File:Visible_gamut_within_CIELAB_color_space_D65_whitepoint_mesh.webm



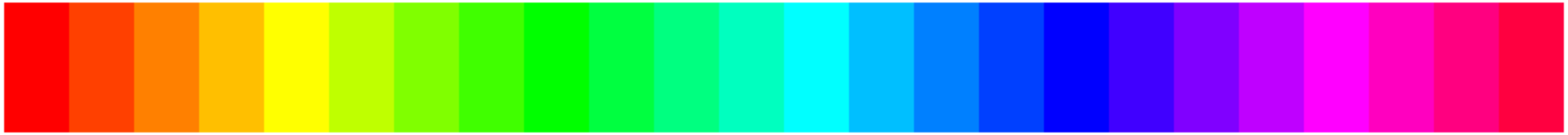
commons.wikimedia.org/wiki/File:Visible_gamut_within_CIELAB_color_space_D65_whitepoint_mesh.webm



commons.wikimedia.org/wiki/File:Visible_gamut_within_CIELAB_color_space_D65_whitepoint_mesh.webm

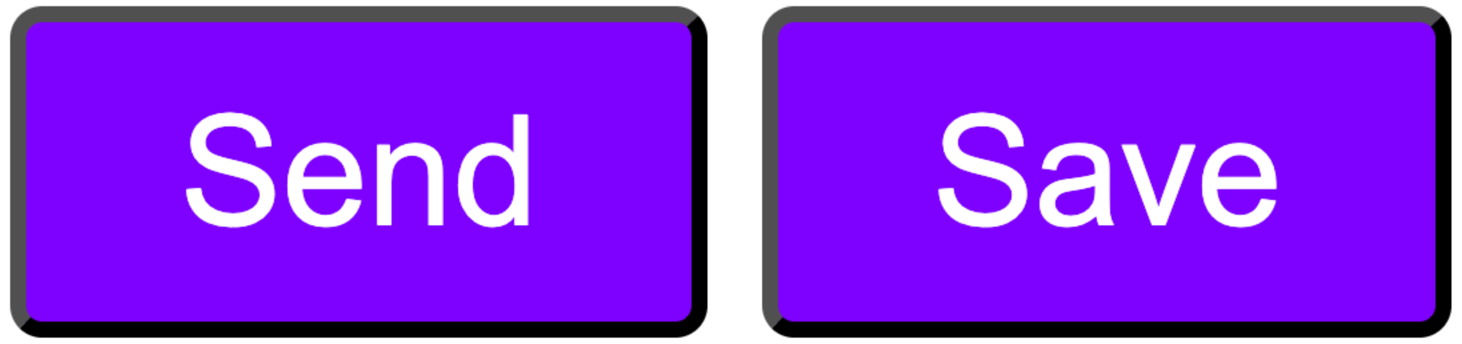


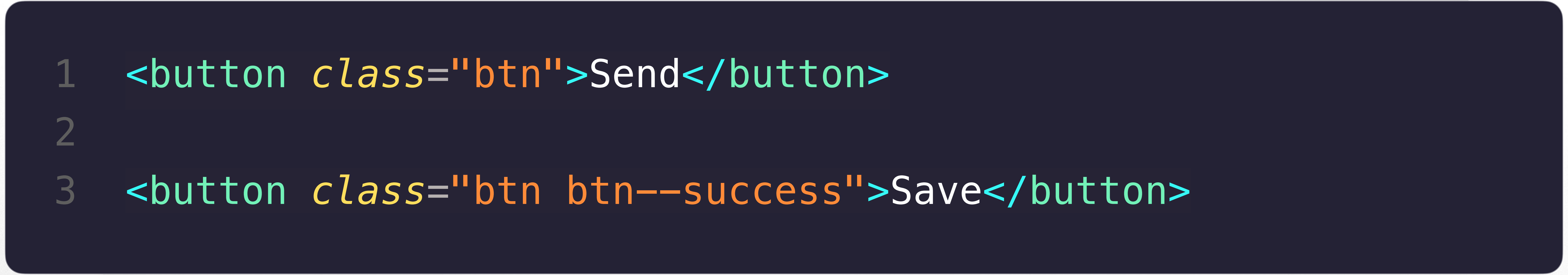
commons.wikimedia.org/wiki/File:Visible_gamut_within_CIELAB_color_space_D65_whitepoint_mesh.webm



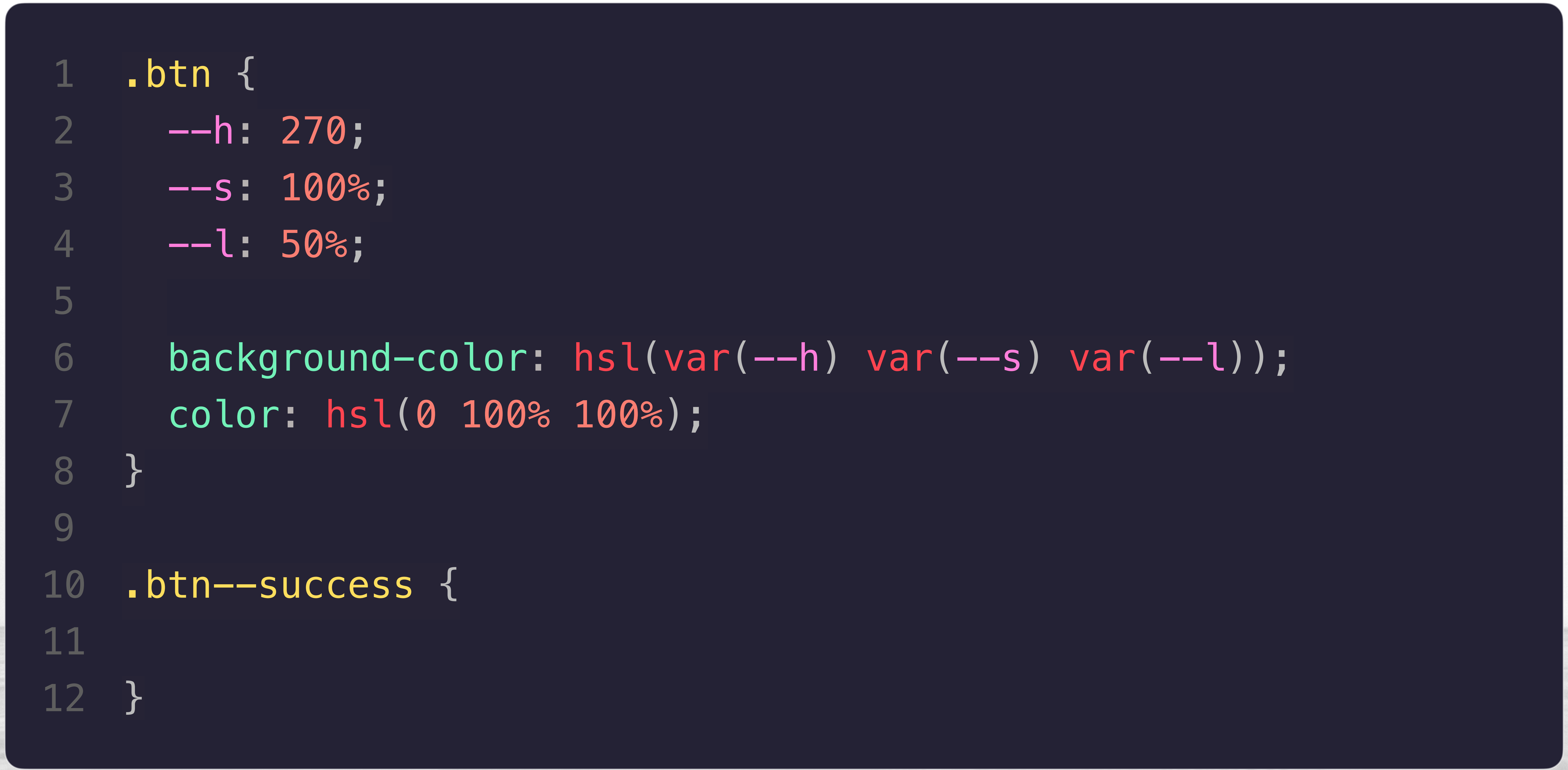
hsl([x]deg, 100%, 50%)

wildbit.com/blog/accessible-palette-stop-using-hsl-for-color-systems

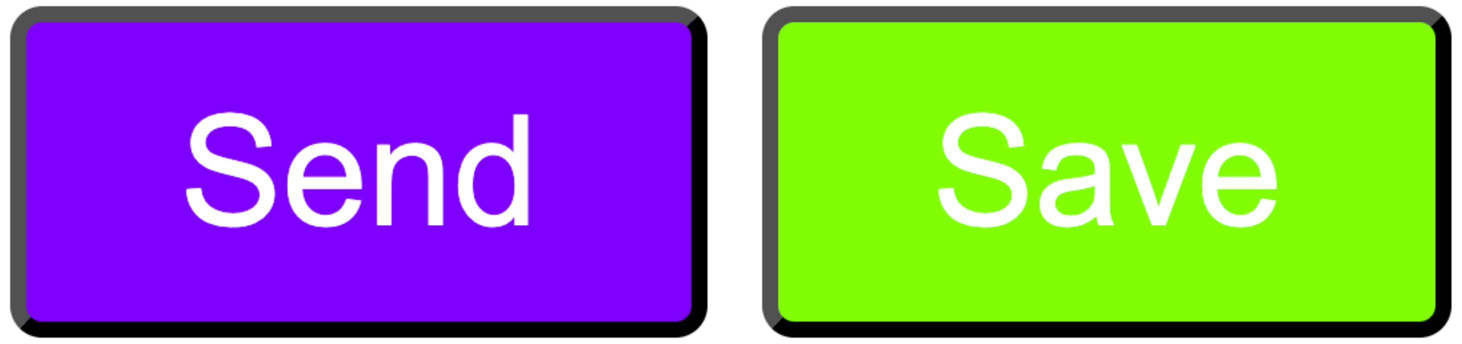




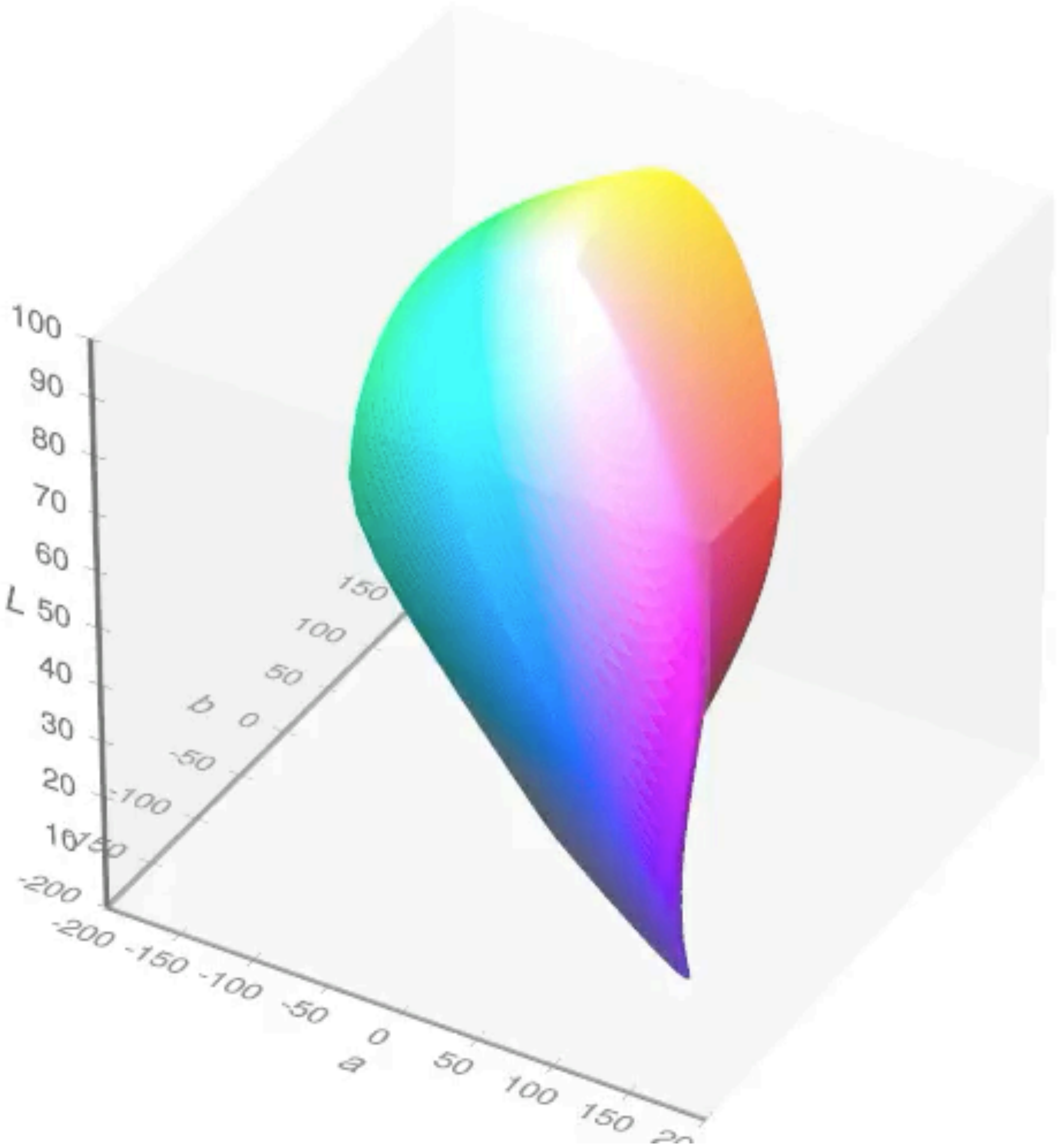
```html
<button class="btn">Send</button>

<button class="btn btn--success">Save</button>
```



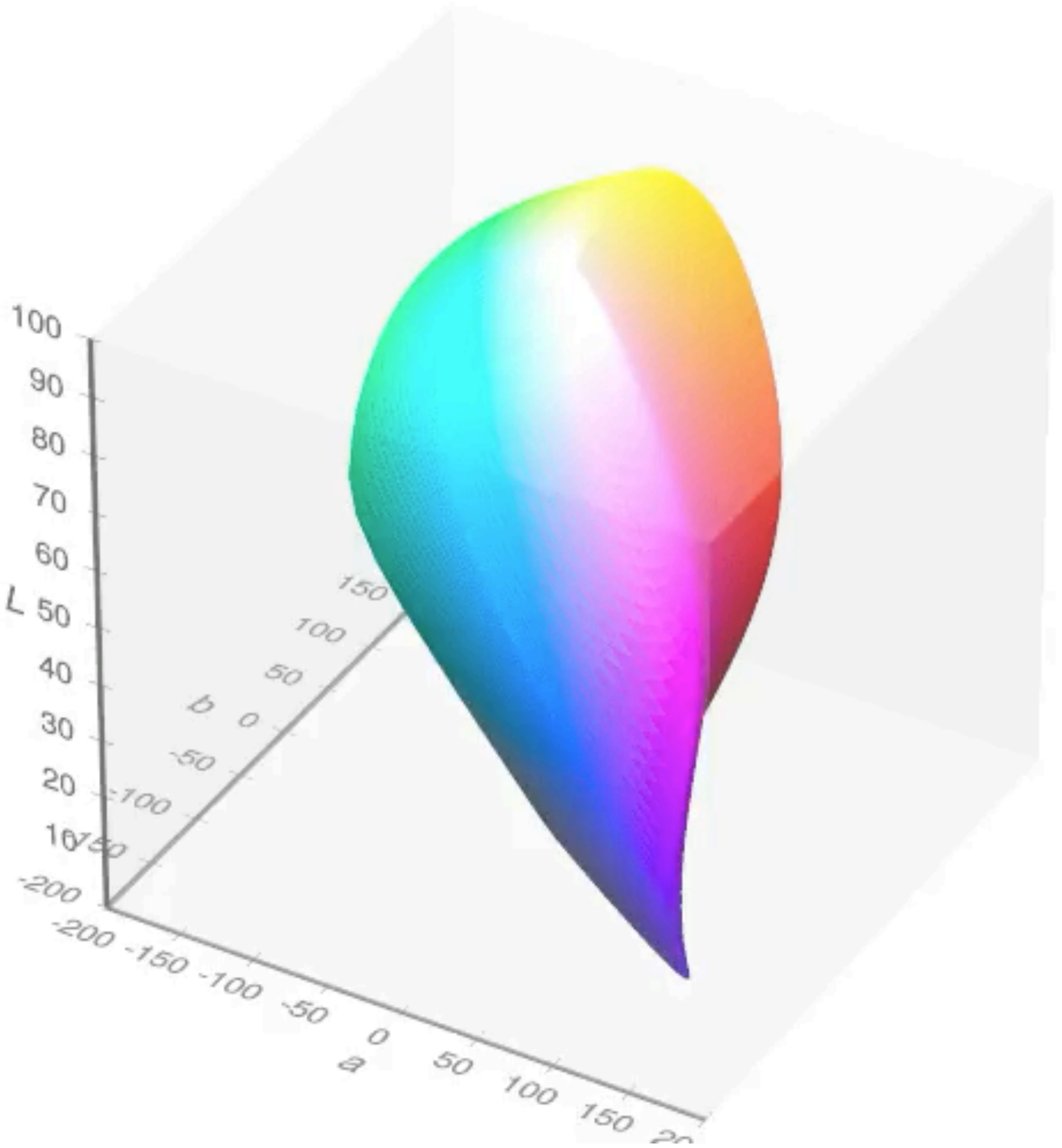
```css
.btn {
  --h: 270;
  --s: 100%;
  --l: 50%;

  background-color: hsl(var(--h) var(--s) var(--l));
  color: hsl(0 100% 100%);
}

.btn--success {

}
```



```css
.btn--success {
  --h: 90;
}
```

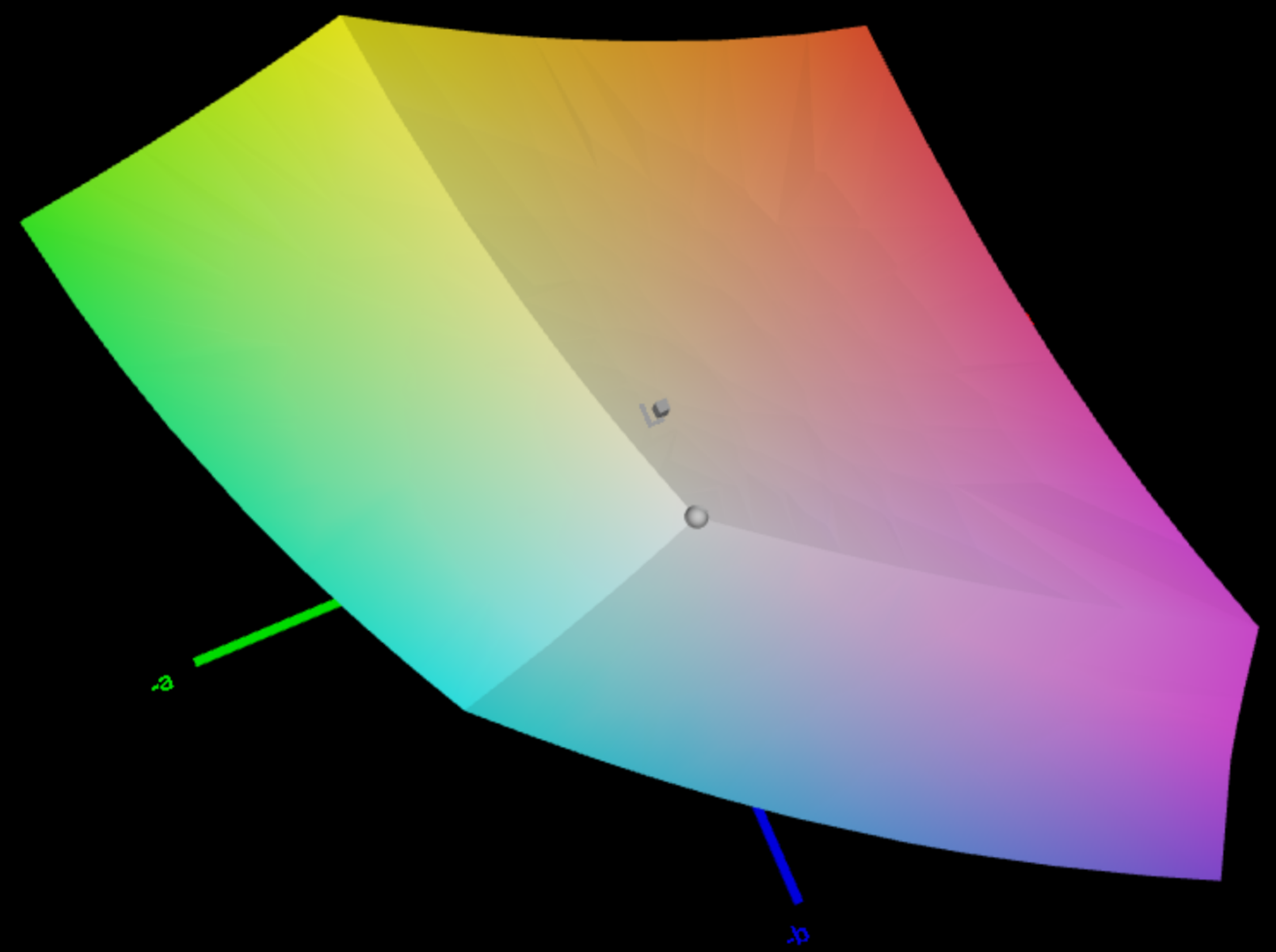


commons.wikimedia.org/wiki/File:Visible_gamut_within_CIELAB_color_space_D65_whitepoint_mesh.webm

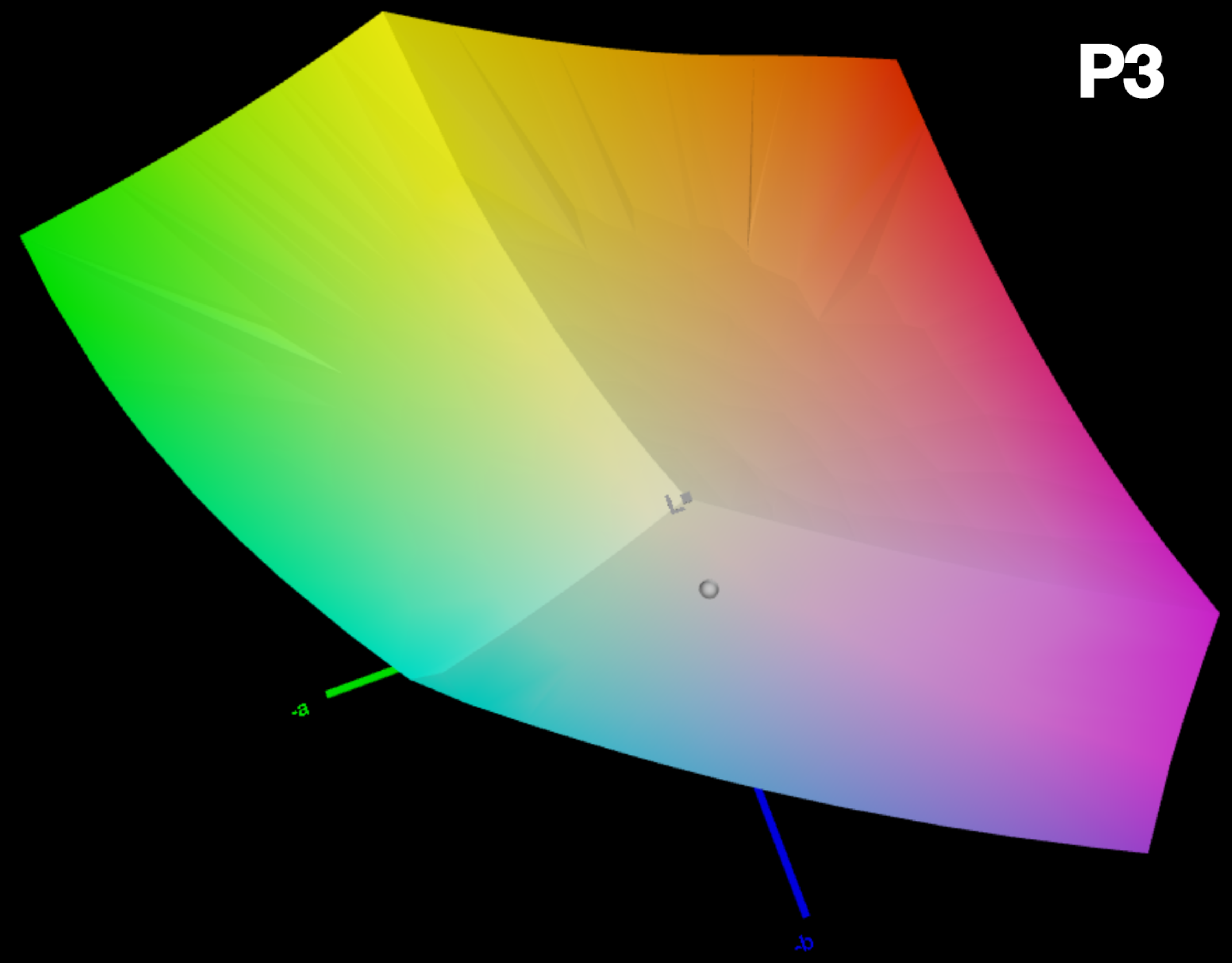


commons.wikimedia.org/wiki/File:Visible_gamut_within_CIELAB_color_space_D65_whitepoint_mesh.webm

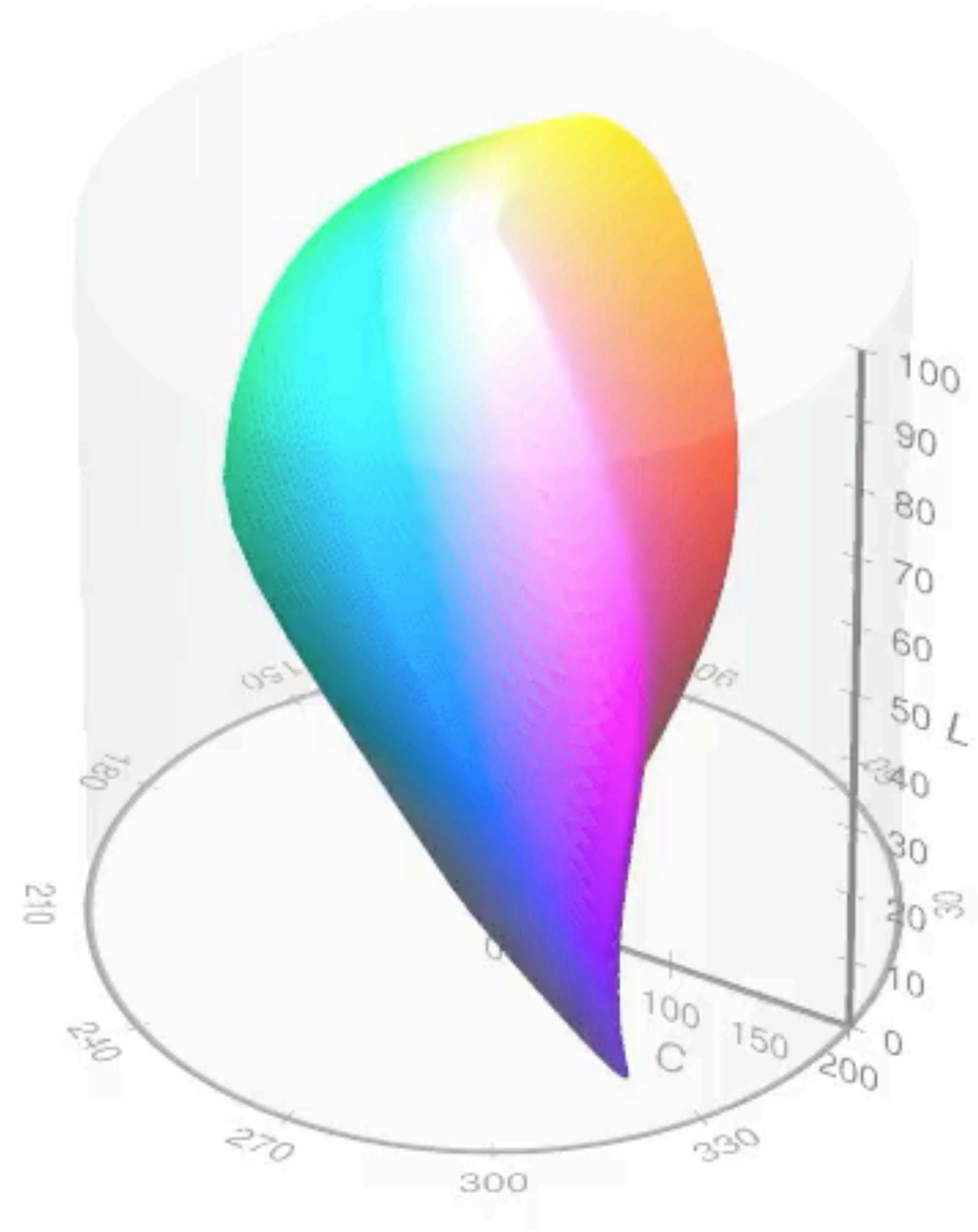
sRGB



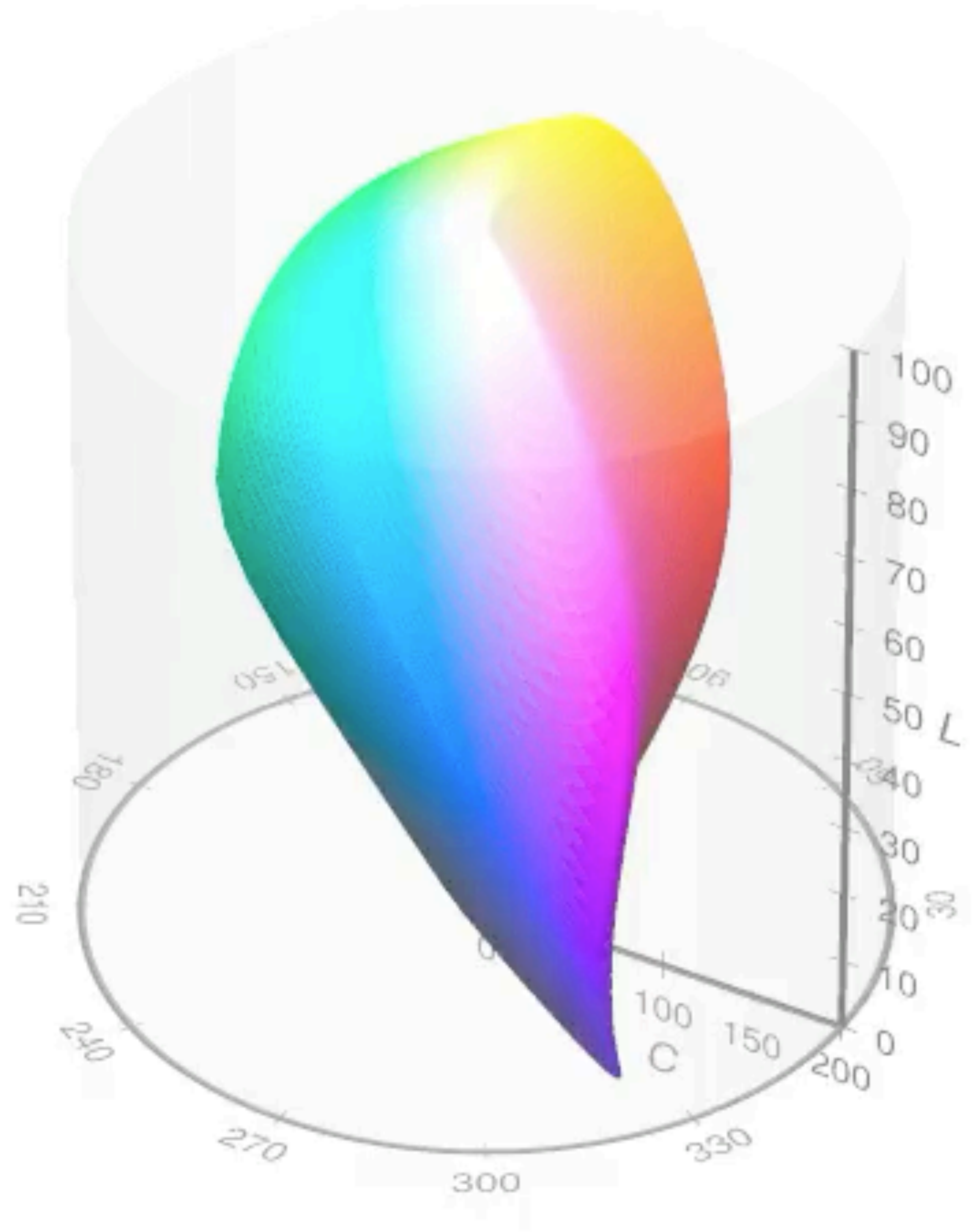
P3



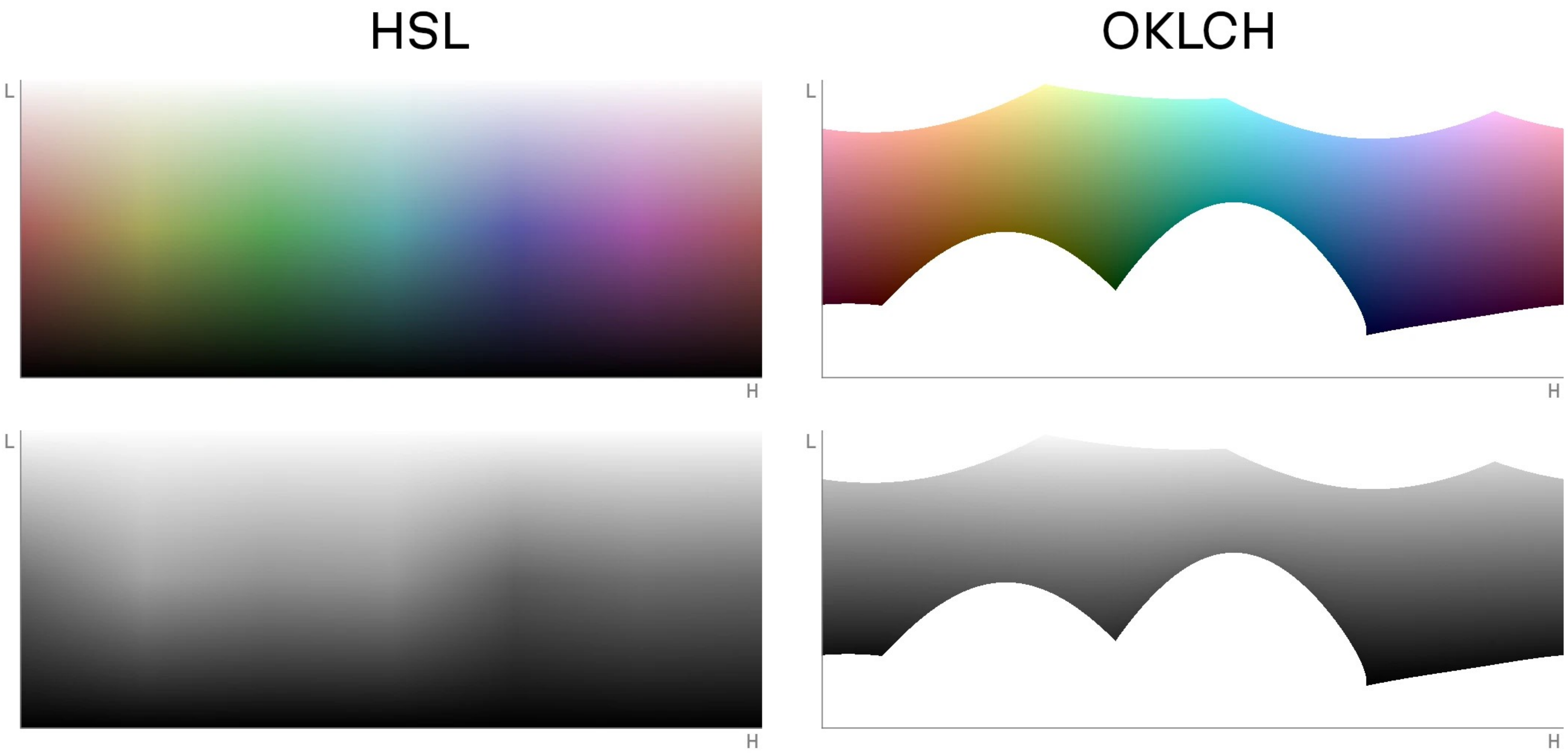
lea.verou.me/blog/2020/04/lch-colors-in-css-what-why-and-how



commons.wikimedia.org/wiki/File:Visible_gamut_within_CIELAB_color_space_D65_whitepoint_mesh.webm



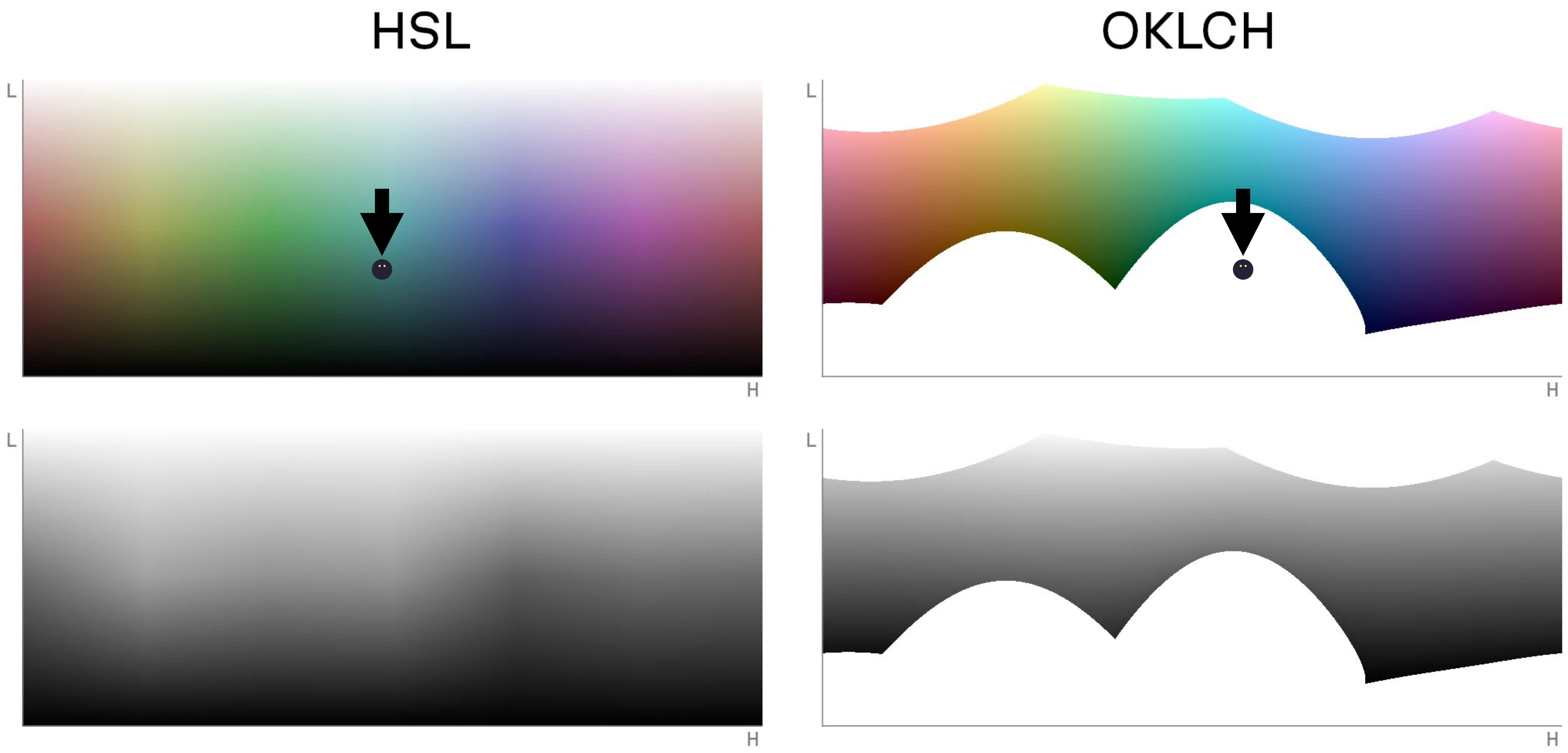
commons.wikimedia.org/wiki/File:Visible_gamut_within_CIELAB_color_space_D65_whitepoint_mesh.webm



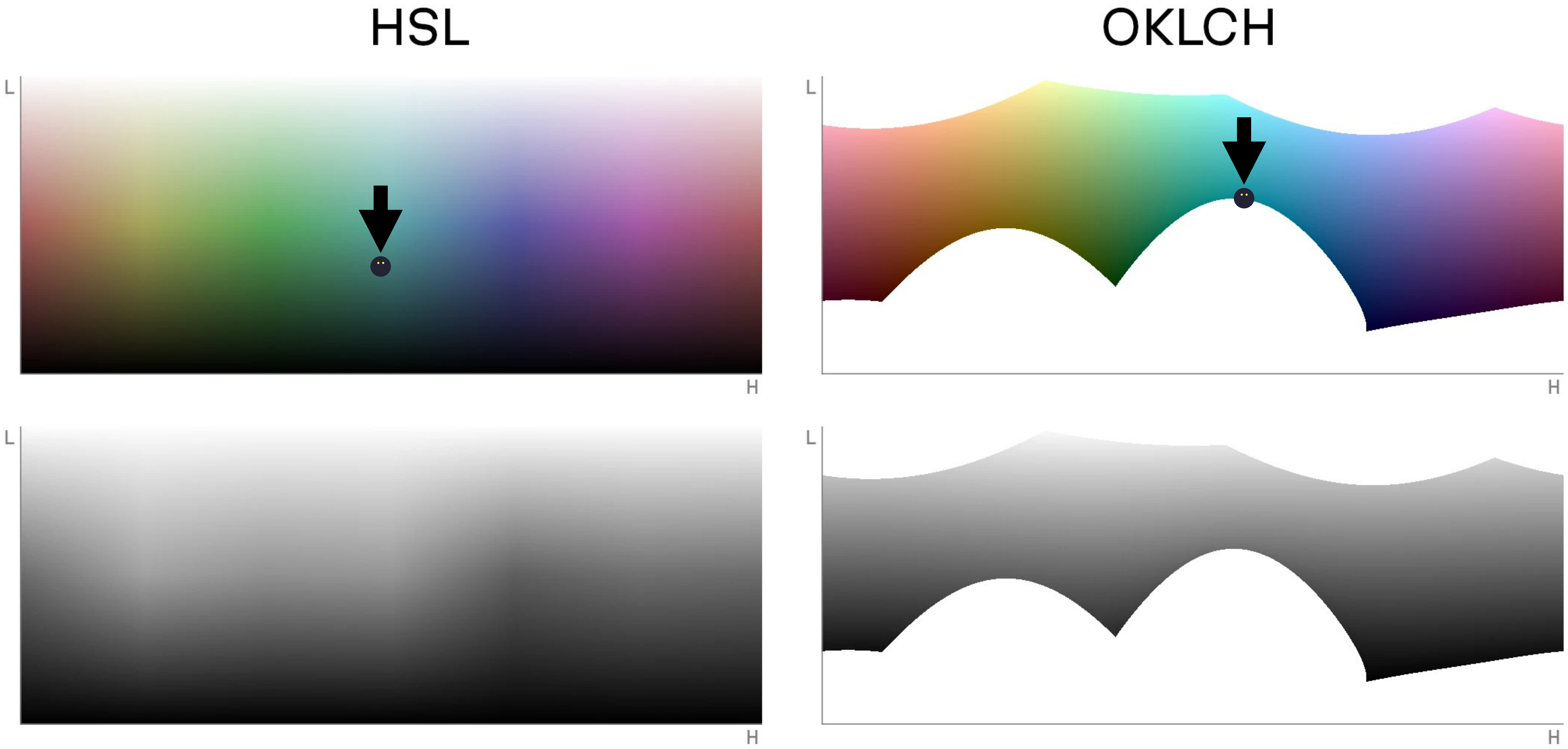
HSL

OKLCH

evilmartians.com/chronicles/oklch-in-css-why-quit-rgb-hsl



evilmartians.com/chronicles/oklch-in-css-why-quit-rgb-hsl



evilmartians.com/chronicles/oklch-in-css-why-quit-rgb-hsl

oklch(90% 15% 0deg) (in gamut)

oklch(90% 16% 0deg) (out of gamut)

oklch(90% 17% 0deg)

oklch(90% 18% 0deg)

oklch(90% 19% 0deg)

oklch(90% 20% 0deg)

oklch(90% 40% 0deg)

oklch(90% 60% 0deg)

oklch(90% 80% 0deg)

oklch(90% 100% 0deg)

cdpn.io/pen/pen/zYeXvXM

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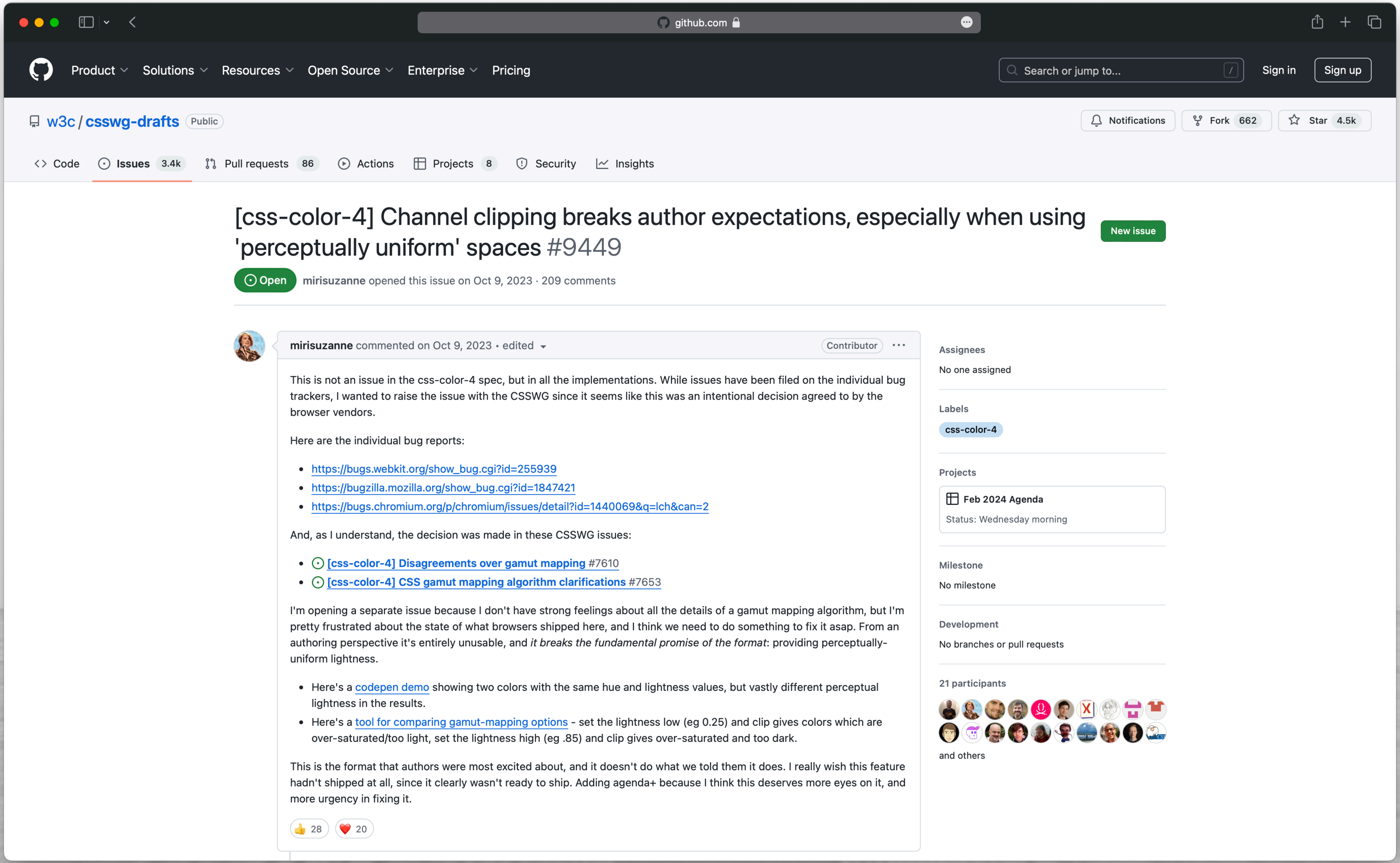
hue 242 chroma 50

browser
90
80
70
60
50
40
30
20
10
spec
90
80
70
60
50
40
30
20
10

cdpn.io/pen/debug/rNRoBXO

matuzo.social



[css-color-4] Channel clipping breaks author expectations, especially when using 'perceptually uniform' spaces #9449

Open mirisuzanne opened this issue on Oct 9, 2023 · 209 comments

mirisuzanne commented on Oct 9, 2023 • edited

This is not an issue in the css-color-4 spec, but in all the implementations. While issues have been filed on the individual bug trackers, I wanted to raise the issue with the CSSWG since it seems like this was an intentional decision agreed to by the browser vendors.

Here are the individual bug reports:

- https://bugs.webkit.org/show_bug.cgi?id=255939
- https://bugzilla.mozilla.org/show_bug.cgi?id=1847421
- https://bugs.chromium.org/p/chromium/issues/detail?id=1440069&q=lch&can=2

And, as I understand, the decision was made in these CSSWG issues:

- [css-color-4] Disagreements over gamut mapping #7610
- [css-color-4] CSS gamut mapping algorithm clarifications #7653

I'm opening a separate issue because I don't have strong feelings about all the details of a gamut mapping algorithm, but I'm pretty frustrated about the state of what browsers shipped here, and I think we need to do something to fix it asap. From an authoring perspective it's entirely unusable, and *it breaks the fundamental promise of the format*: providing perceptually-uniform lightness.

- Here's a codepen demo showing two colors with the same hue and lightness values, but vastly different perceptual lightness in the results.
- Here's a tool for comparing gamut-mapping options - set the lightness low (eg 0.25) and clip gives colors which are over-saturated/too light, set the lightness high (eg .85) and clip gives over-saturated and too dark.

This is the format that authors were most excited about, and it doesn't do what we told them it does. I really wish this feature hadn't shipped at all, since it clearly wasn't ready to ship. Adding agenda+ because I think this deserves more eyes on it, and more urgency in fixing it.

👍 28 ❤️ 20

Assignees
No one assigned

Labels
css-color-4

Projects
Feb 2024 Agenda
Status: Wednesday morning

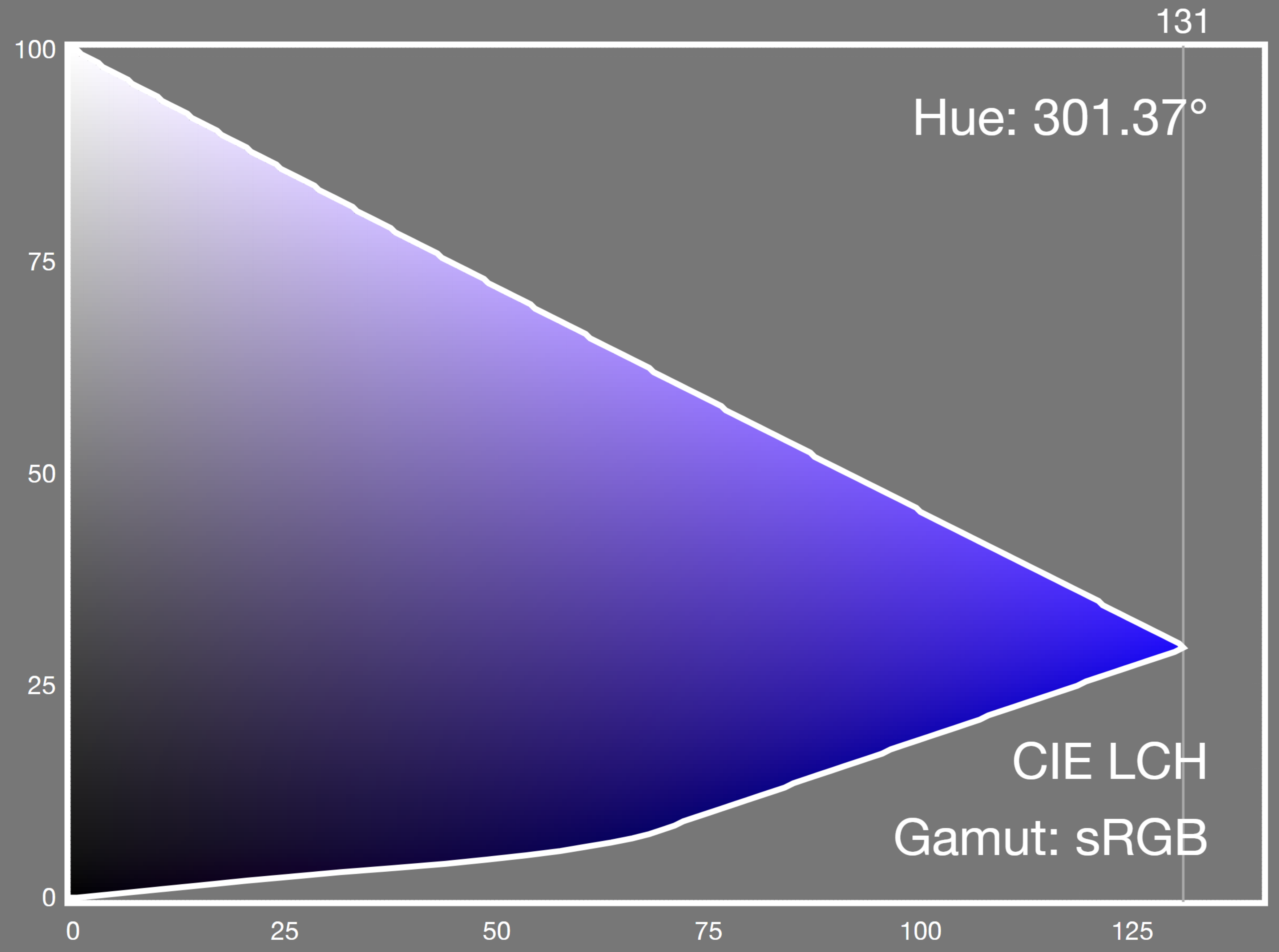
Milestone
No milestone

Development
No branches or pull requests

21 participants
and others

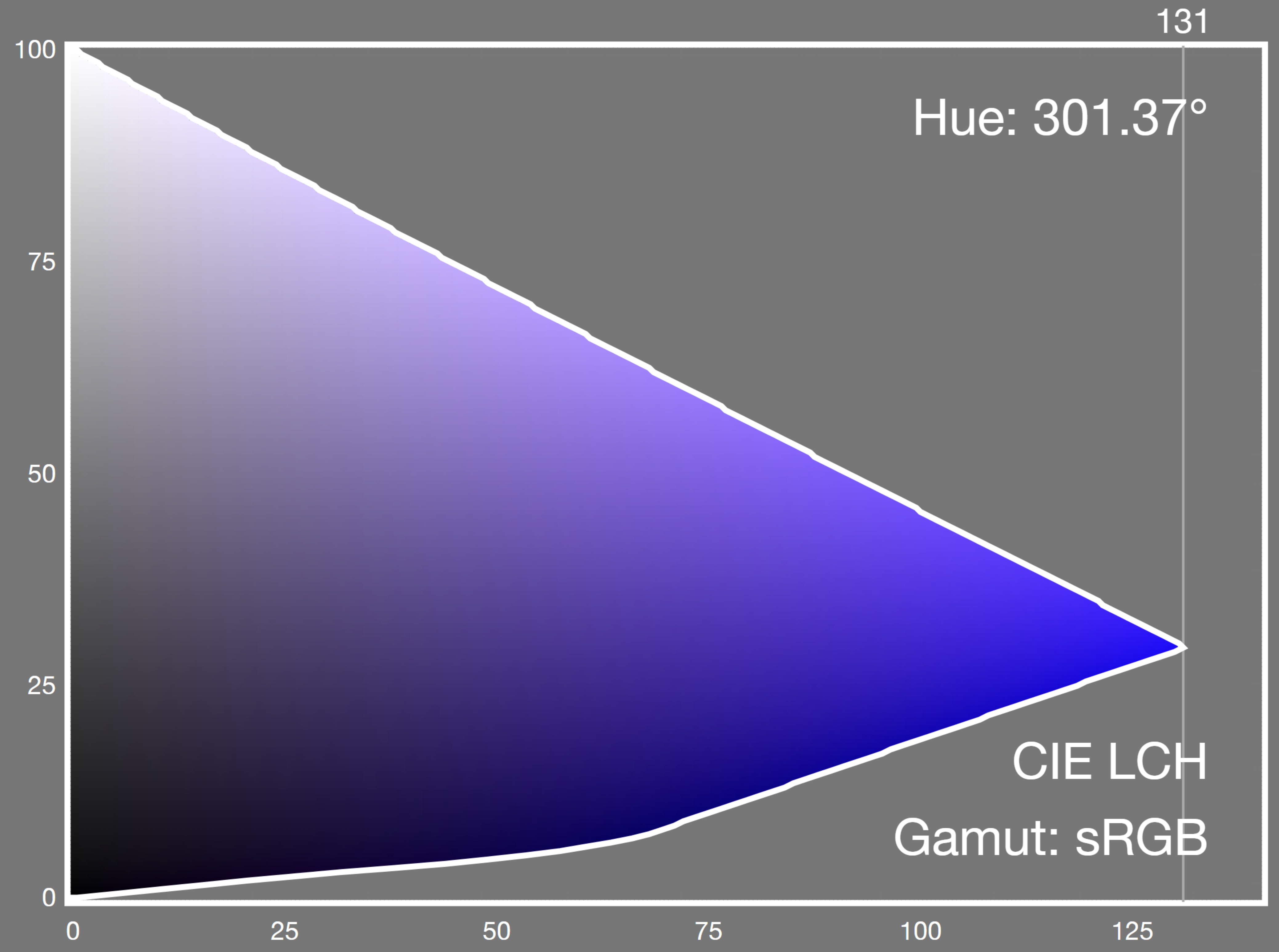
github.com/w3c/csswg-drafts/issues/9449

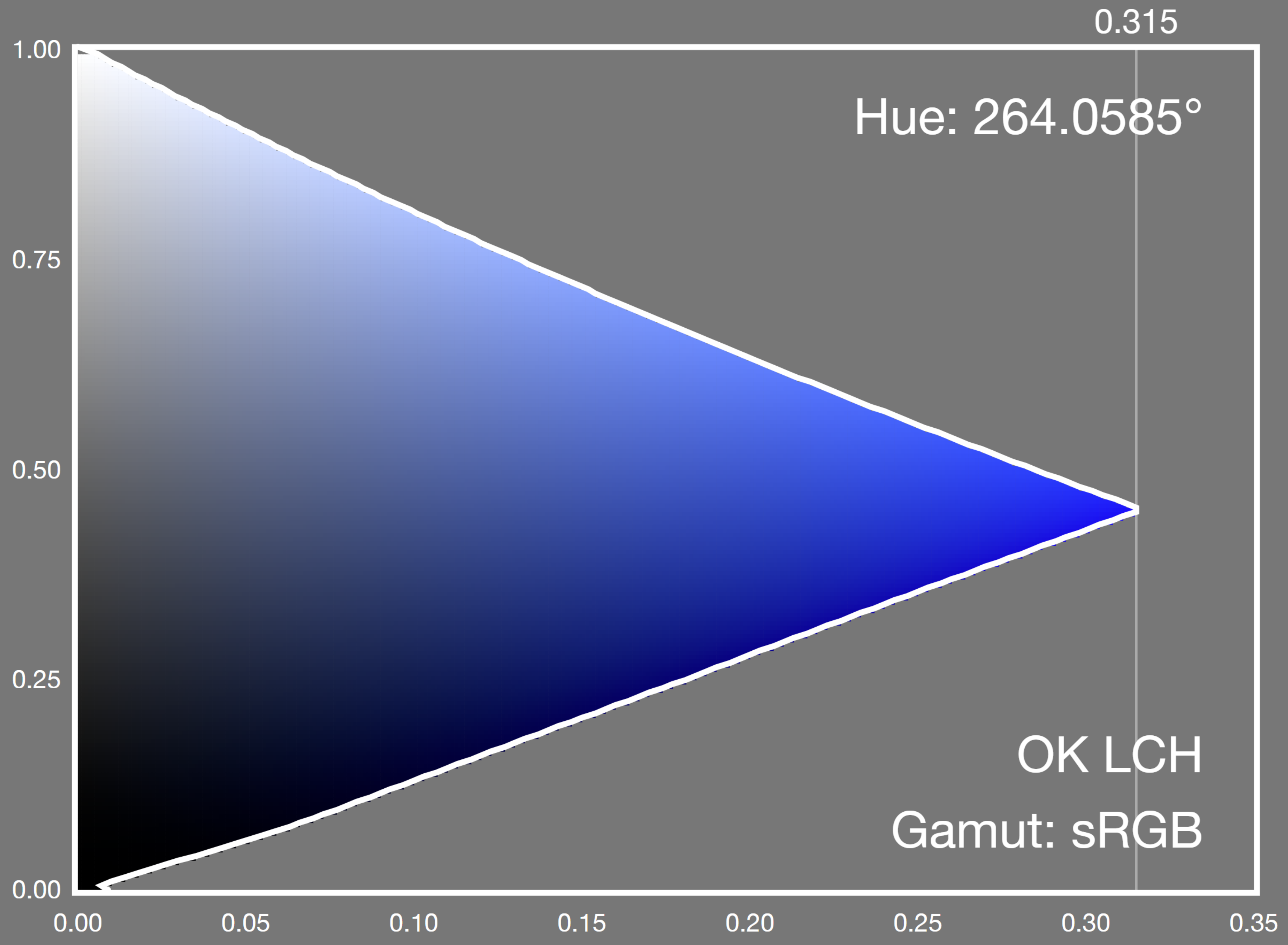
vancouver



w3.org/TR/css-color-4/#GM-hue-curvature

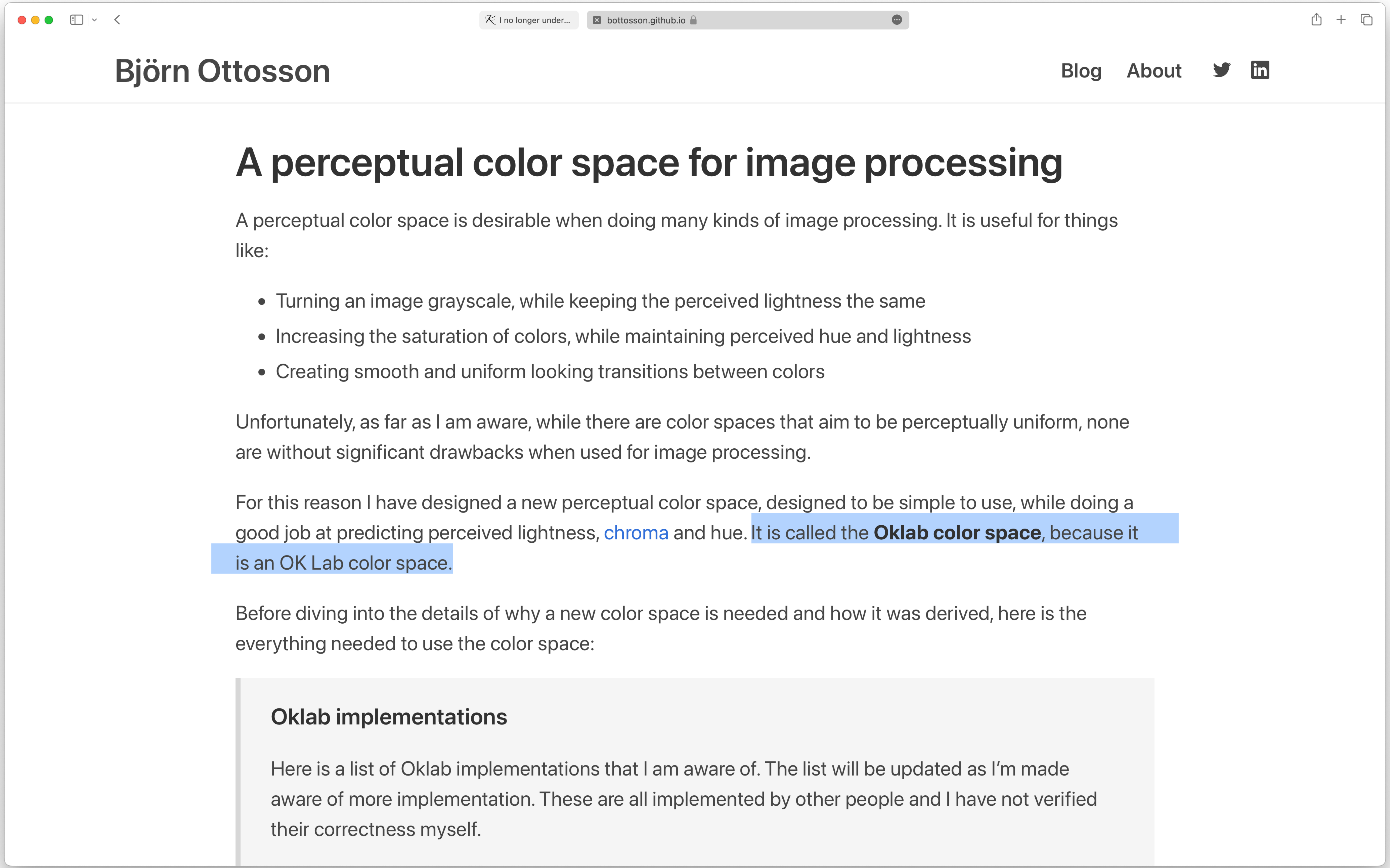
matuzo.social





w3.org/TR/css-color-4/#GM-hue-curvature

matuzo.social



Björn Ottosson

A perceptual color space for image processing

A perceptual color space is desirable when doing many kinds of image processing. It is useful for things like:

- Turning an image grayscale, while keeping the perceived lightness the same
- Increasing the saturation of colors, while maintaining perceived hue and lightness
- Creating smooth and uniform looking transitions between colors

Unfortunately, as far as I am aware, while there are color spaces that aim to be perceptually uniform, none are without significant drawbacks when used for image processing.

For this reason I have designed a new perceptual color space, designed to be simple to use, while doing a good job at predicting perceived lightness, chroma and hue. It is called the **Oklab color space**, because it is an OK Lab color space.

Before diving into the details of why a new color space is needed and how it was derived, here is the everything needed to use the color space:

> ### Oklab implementations
>
> Here is a list of Oklab implementations that I am aware of. The list will be updated as I'm made aware of more implementation. These are all implemented by other people and I have not verified their correctness myself.

bottosson.github.io/posts/oklab

```
color-mix(in lab, #0000ff, #ffffff 100%)
```

lab(99.99983 -0.0038146973 -0.01411438)

lab

```
color-mix(in lab, #0000ff, #ffffff 100%)
```

lab(99.99983 -0.0038146973 -0.01411438)

```css
body {
  background-color: lch(17 34.86 136.89);
  background-color: lab(17 -25.45 23.82);

  background-color: oklch(0.28 0.09 142.49);
  background-color: oklab(0.28 -0.08 0.06);
}
```

111 111 113 15.4

oklch()

l: lightness: 0% to 100% or 0 to 1

c: chroma 0 and 0.37.

h: 0deg to 360deg.

/ **a**: 0 to 1

e.g., oklch(0.73 0.2 352)

oklch()

l: lightness: 0% to 100% or 0 to 1

c: chroma 0 and 0.37.

h: 0deg to 360deg.

/ **a**: 0 to 1

e.g., oklch(0.73 0.2 352)

oklab()

l: lightness: 0% to 100% or 0 to 1

a: -0.4 to 0.4

b: -0.4 to 0.4

/ **a**: 0 to 1

e.g., oklab(0.73 0.2 -0.03)

oklch.com

OKLCH Color Picker & Converter

P3 Fallback

oklch(61.57% 0.1466 110.56)

#8a8b00

Closest fallback (by chroma) in sRGB

OKLCH LCH

Made at **Evil Martians**,
devtools building consultancy.
By **Andrey Sitnik** & **Roman Shamin**

Why OKLCH is better than RGB and HSL

evilmartians / oklch-picker

Show 3D ●

Show graphs ●

Show P3 ●

Show Rec2020 ○

Lightness: 61.57

Chroma: 0.1466

3D

Hue: 110.56

Alpha: 100

oklch.com

oklch.com
P3
Fallback
C
L
C
H
3D
L
H

OKLCH Color Picker & Converter

oklch(61.57% 0.1466 110.56)

#8a8b00

Closest fallback (by chroma) in sRGB

OKLCH | LCH

Made at **Evil Martians**,
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By **Andrey Sitnik** & **Roman Shamin**

Why OKLCH is better than RGB and HSL

evilmartians / oklch-picker

Show 3D ☑

Show graphs ☑

Show P3 ☑

Show Rec2020 ☐

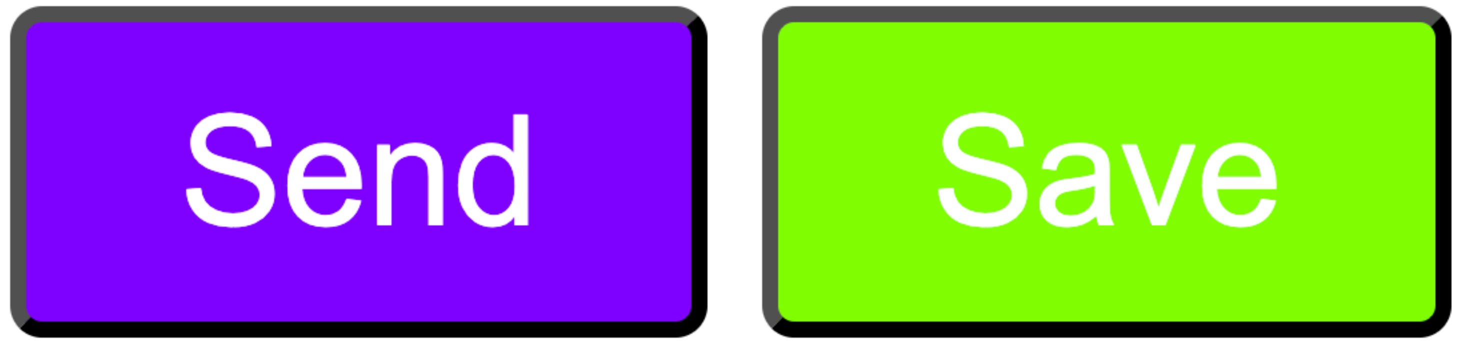
Lightness L 61.57

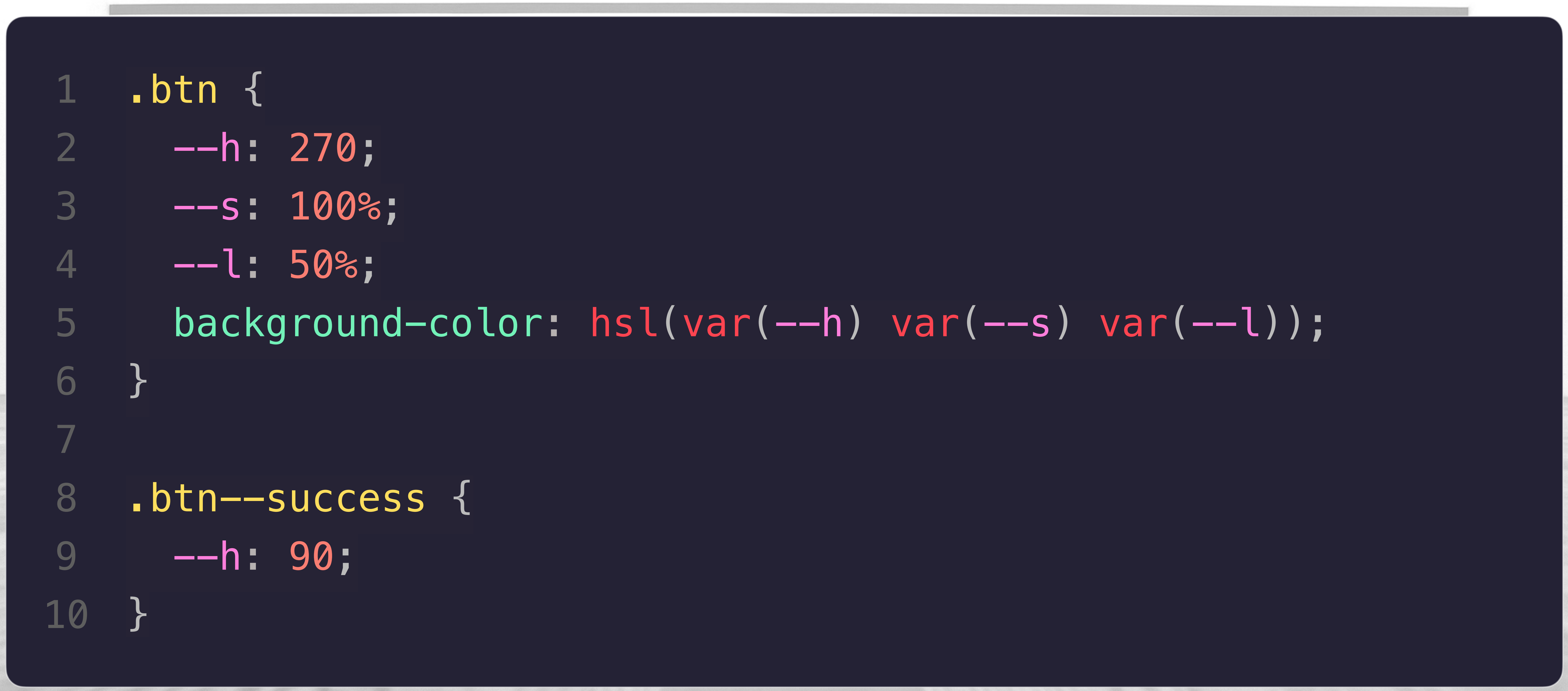
Chroma C 0.1466

Hue H 110.56

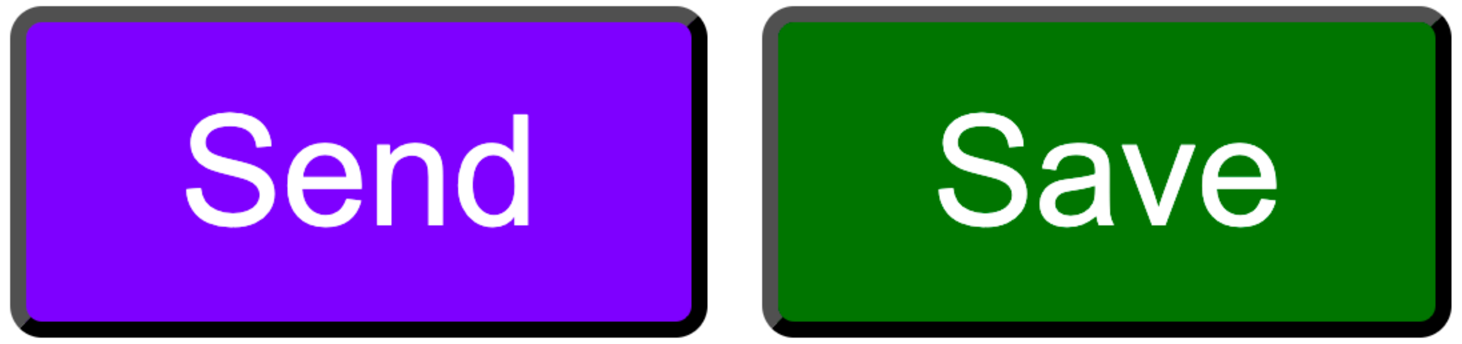
Alpha A 100

oklch.com





```css
.btn {
  --h: 270;
  --s: 100%;
  --l: 50%;
  background-color: hsl(var(--h) var(--s) var(--l));
}

.btn--success {
  --h: 90;
}
```



```css
.btn {
  --l: 39.29%;
  --c: 120.99;
  --h: 308.07;
  background-color: lch(var(--l) var(--c) var(--h));
}

.btn--success {
  --h: 135.84;
}
```

matuzo.social

SPACE-SEPARATED FUNCTIONAL COLOR NOTATIONS

```css
div:is():not(button) {
  background-color: rgb(255, 0, 0);
  background-color: rgba(255, 0, 0, 0.5);

  background-color: rgb(255 0 0);
  background-color: rgb(255 0 0 / 0.5);

  background-color: oklch(0.63 0.26 29.23);
  background-color: oklch(0.63 0.26 29.23 / 0.5);
}
```

65 79 52 12.1

COLOR()

```css
.valid-css-color-function-colors {
  --srgb: color(srgb 1 1 1);
  --srgb-linear: color(srgb-linear 100% 100% 100% / 50%);
  --display-p3: color(display-p3 1 1 1);
  --rec2020: color(rec2020 0 0 0);
  --a98-rgb: color(a98-rgb 1 1 1 / 25%);
  --prophoto: color(prophoto-rgb 0% 0% 0%);
  --xyz: color(xyz 1 1 1);
}
```

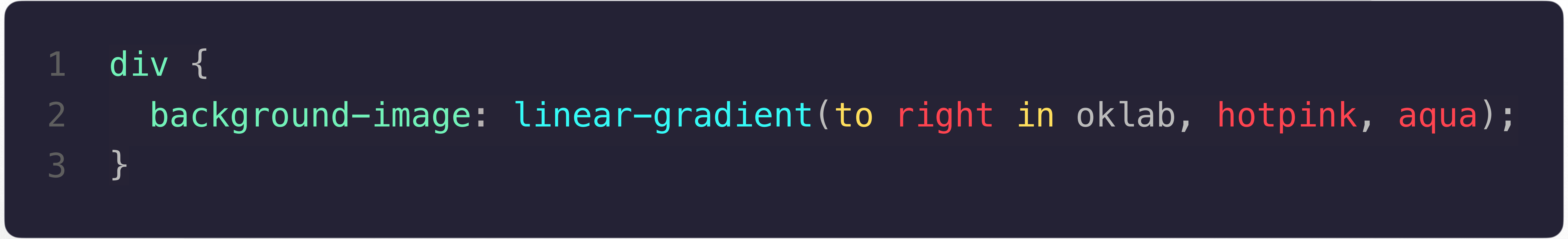
111 111 113 15

```css
:root {
  --primary: #FF0000;
}

body {
  background-color: var(--primary);
}

@media (color-gamut: p3) {
  :root {
    --primary: oklch(0.63 0.26 29.23);
  }
}

@media (color-gamut: rec2020) {
  :root {
    --primary: color(rec2020 1 0 0);
  }
}
```

58 79 110 10

GRADIENTS

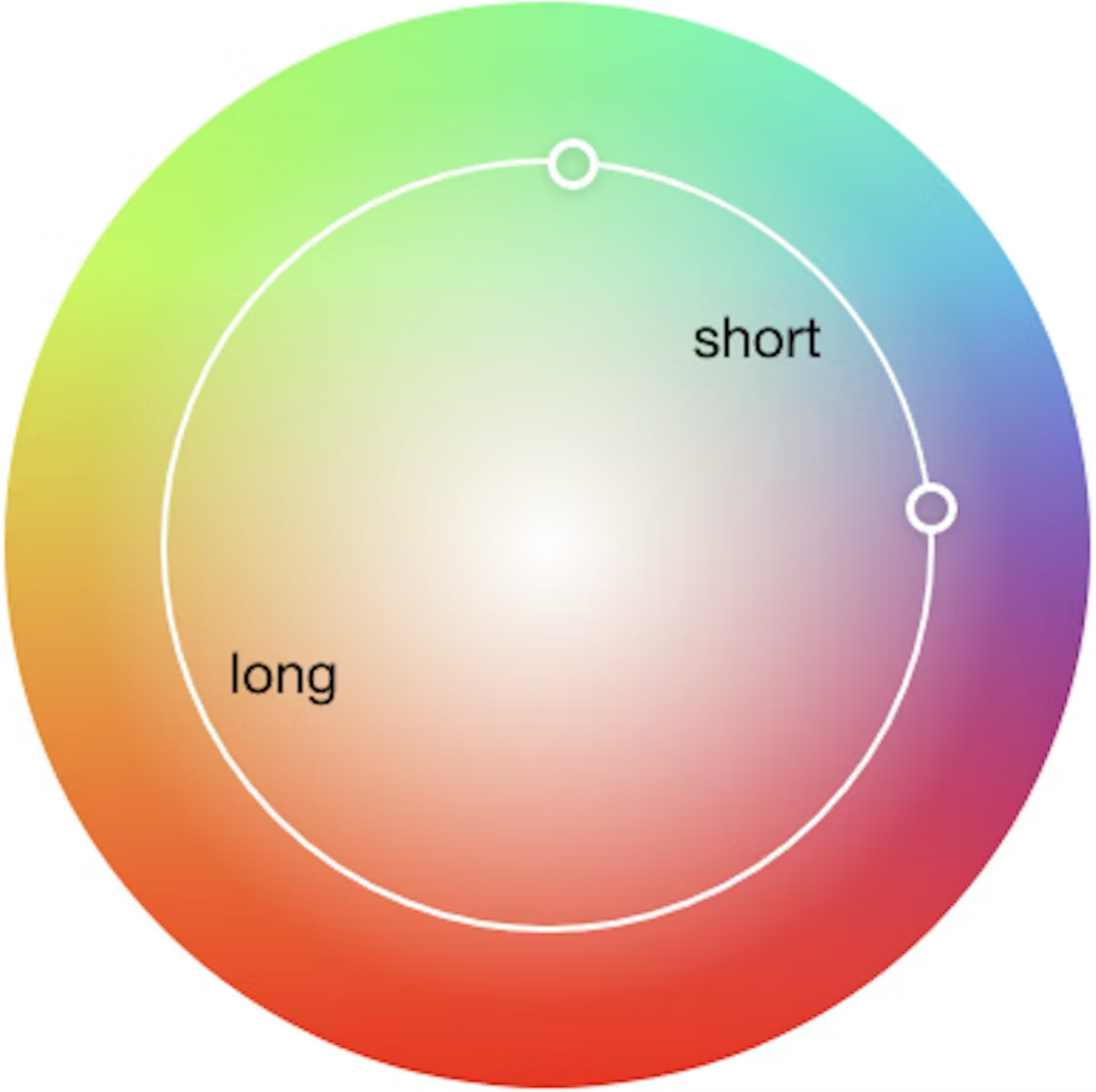
```css
div {
  background-image: linear-gradient(to right, hotpink, aqua);
}
```



```css
div {
  background-image: linear-gradient(to right in oklab, hotpink, aqua);
}
```

111 111 127 16.2

srgb
oklab
oklch



nerdy.dev/gradients-going-the-shorter-longer-increasing-or-decreasing-route

```css
.shorter {
  background-image: linear-gradient(to right in oklch shorter hue, hotpink, aqua);
}

.longer {
  background-image: linear-gradient(to right in oklch longer hue, hotpink, aqua);
}
```

111 111 127 16.2

shorter

```css
background-image: linear-gradient(to right in oklch shorter hue, hotpink, aqua);
```

longer

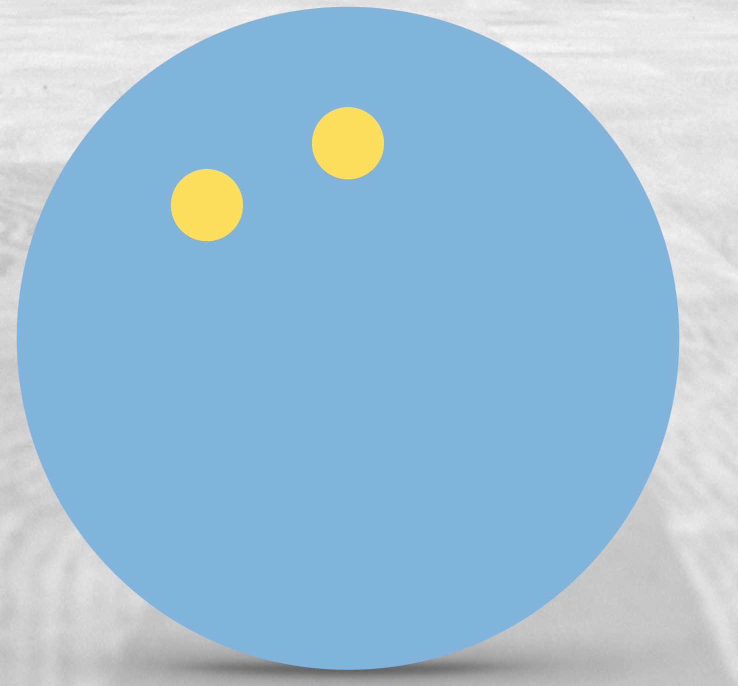
```css
background-image: linear-gradient(to right in oklch longer hue, hotpink, aqua);
```

COLOR-MIX()

```css
div {
  background-color: color-mix(in srgb, hotpink, aqua);
}
```

111 111 113 16.2

```css
div {
  background-color: color-mix(in srgb, hotpink, aqua);
}
```

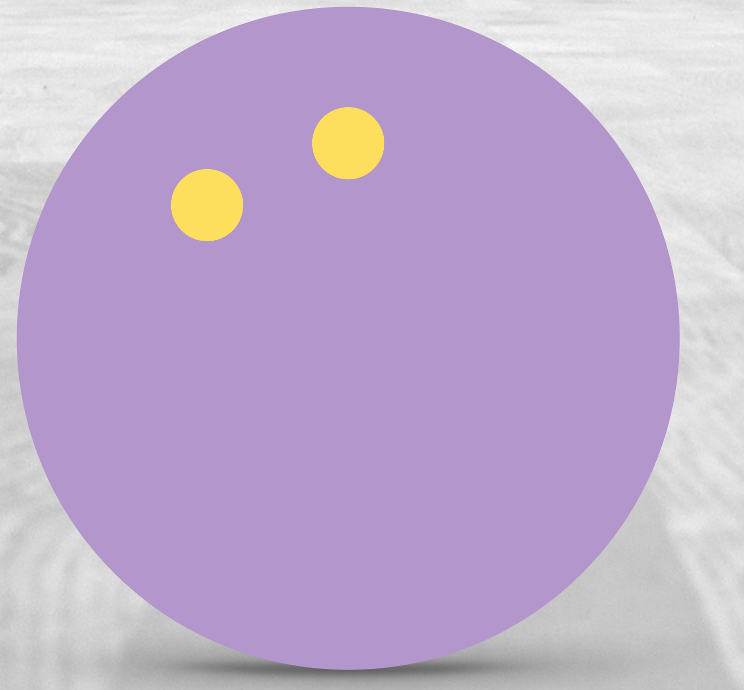


111 111 113 16.2

```css
div {
  background-color: color-mix(in srgb, 70% hotpink, 30% aqua);
}
```

111 111 113 16.2

```css
div {
  background-color: color-mix(in srgb, 70% hotpink, 30% aqua);
}
```



111 111 113 16.2

```
color: blue 64%;
```

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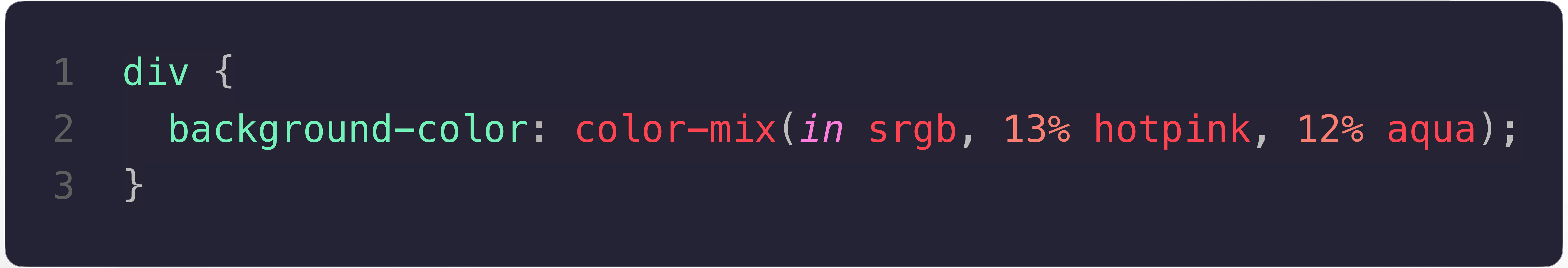
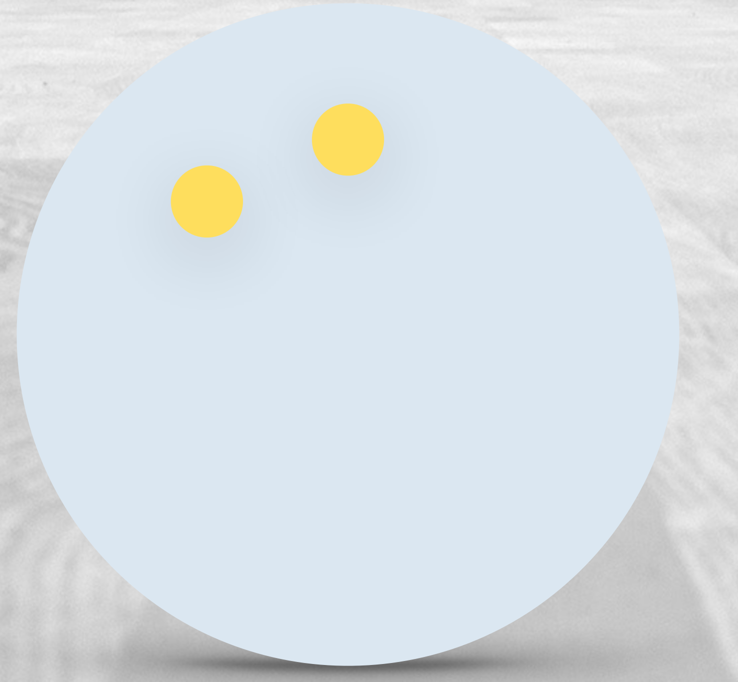


```
div {
  background-color: color-mix(in srgb, 13% hotpink, 12% aqua);
}
```

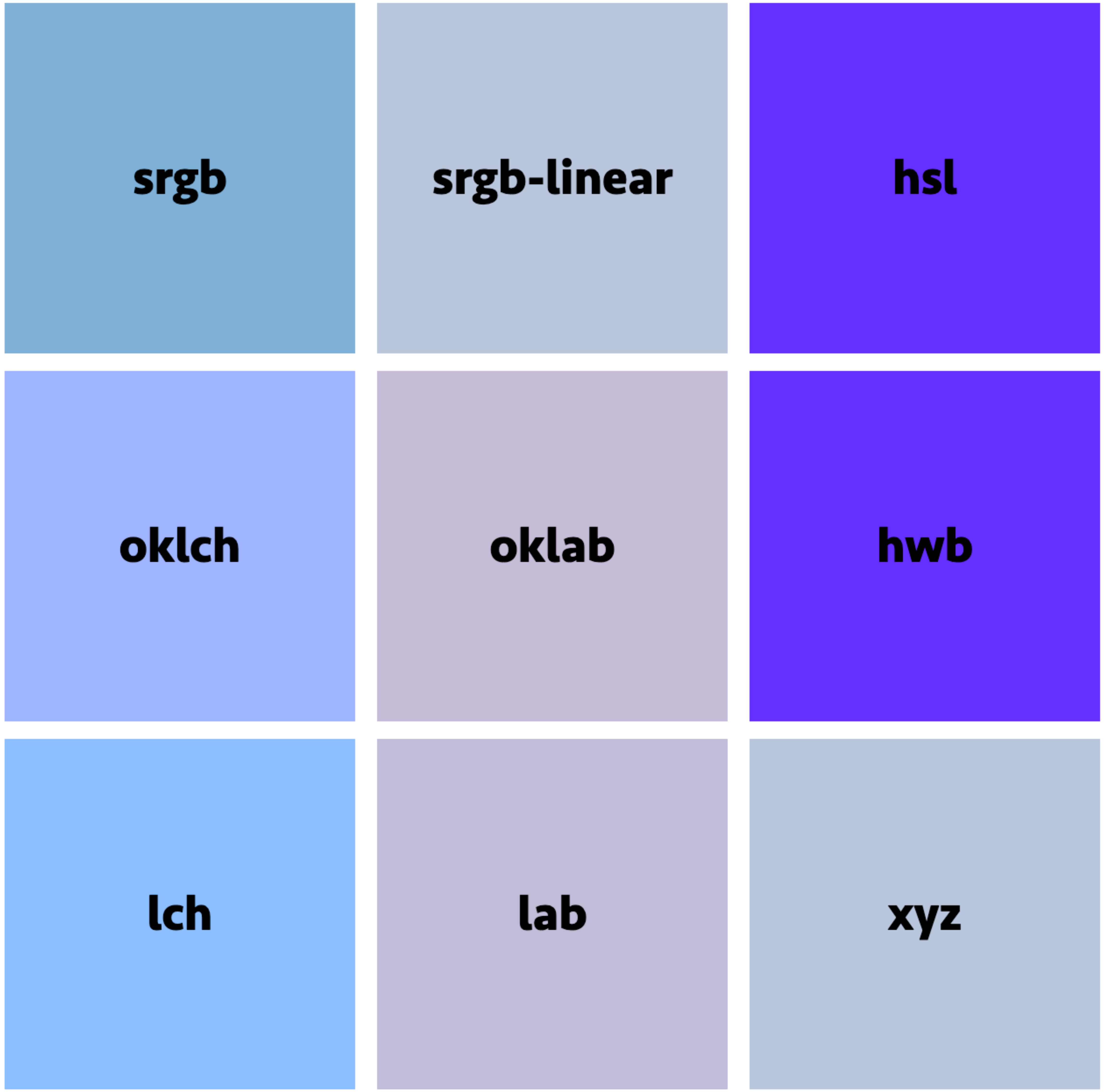
111 111 113 16.2

matuzo.social

```css
div {
  background-color: color-mix(in srgb, 13% hotpink, 12% aqua);
}
```



111 111 113 16.2



srgb srgb-linear hsl

oklch oklab hwb

lch lab xyz

oklab

```
color-mix(in oklab, #ff69b4, #00ffff 50%)
```

oklab(0.81684834 0.022855558 -0.033421867)

cdpn.io/pen/debug/JjBZLrm

oklab

```
color-mix(in oklab, #ff69b4, #00ffff 50%)
```

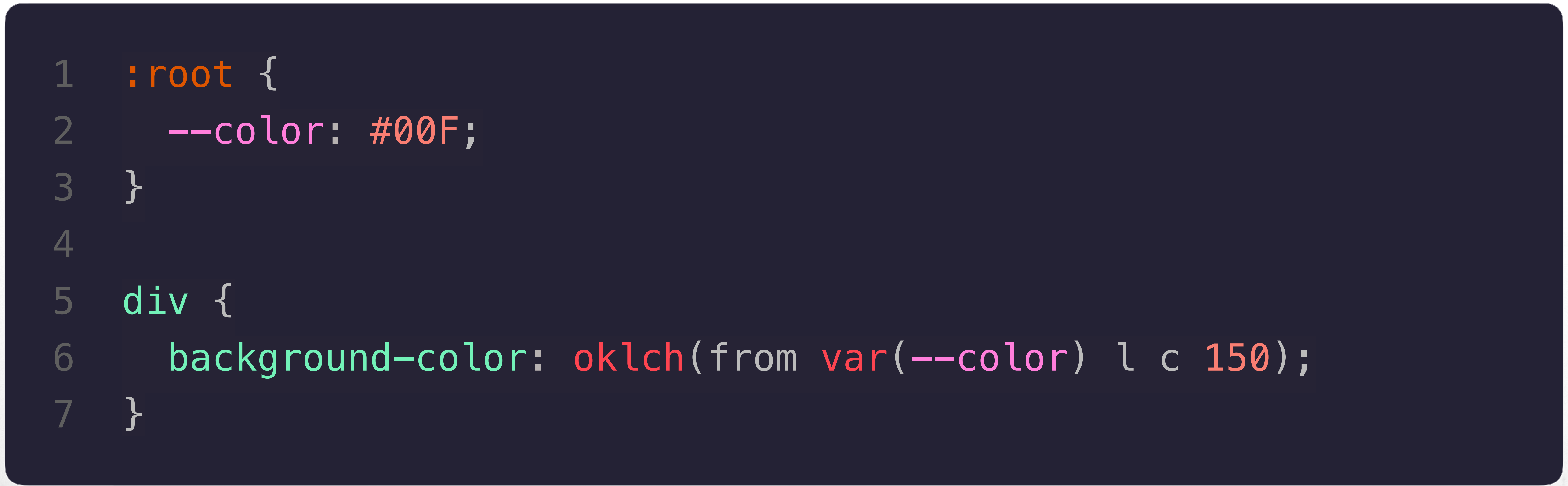
oklab(0.81684834 0.022855558 -0.033421867)

cdpn.io/pen/debug/JjBZLrm

RELATIVE COLOR SYNTAX

```css
div {
  background-color: oklch(from #00F l c h);
}
```

119 119 128 16.4



```css
:root {
  --color: #00F;
}

div {
  background-color: oklch(from var(--color) l c 150);
}
```

119 119 128 16.4

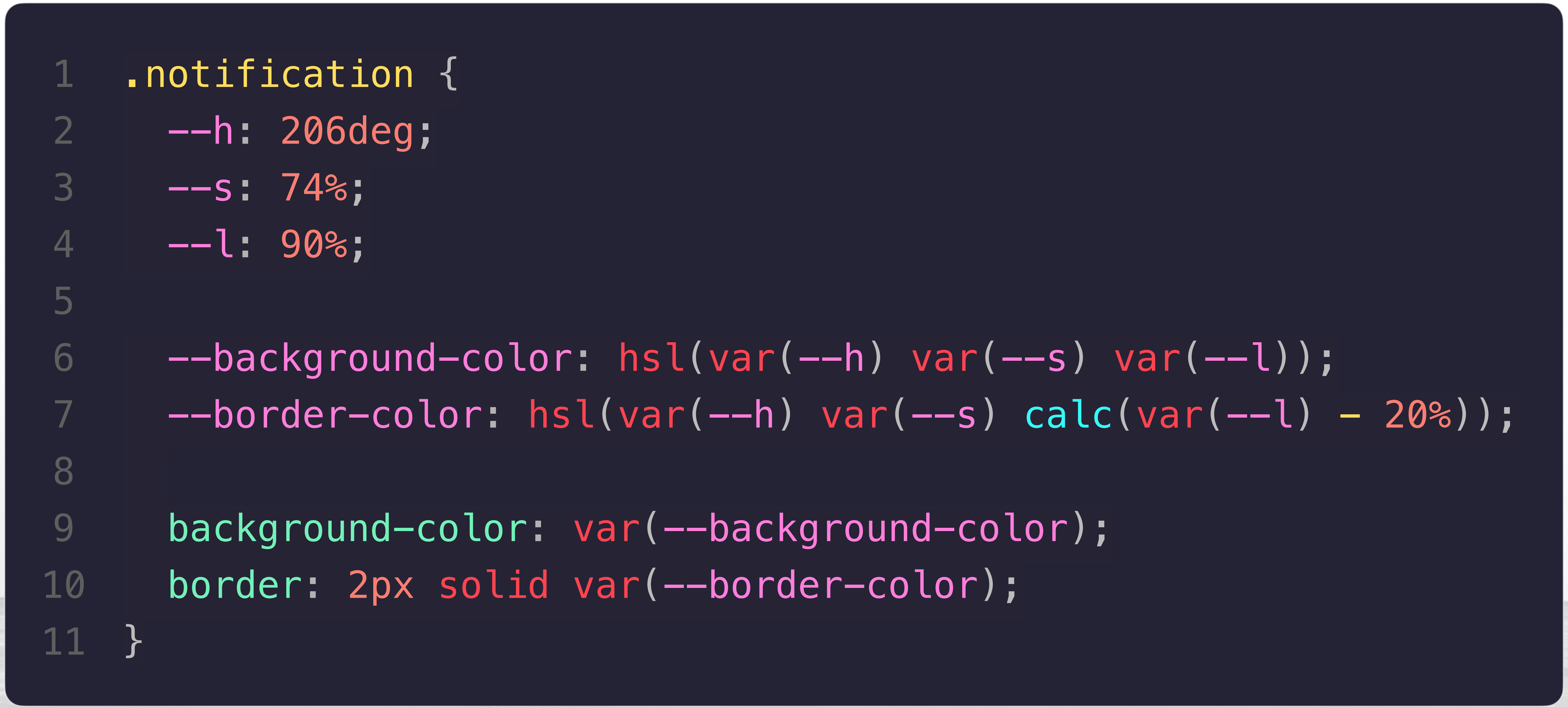
```css
:root {
  --color: #00F;
}

div {
  background-color: hsl(from var(--color) h s calc(l - 10%));
}
```

119 119 128 16.4

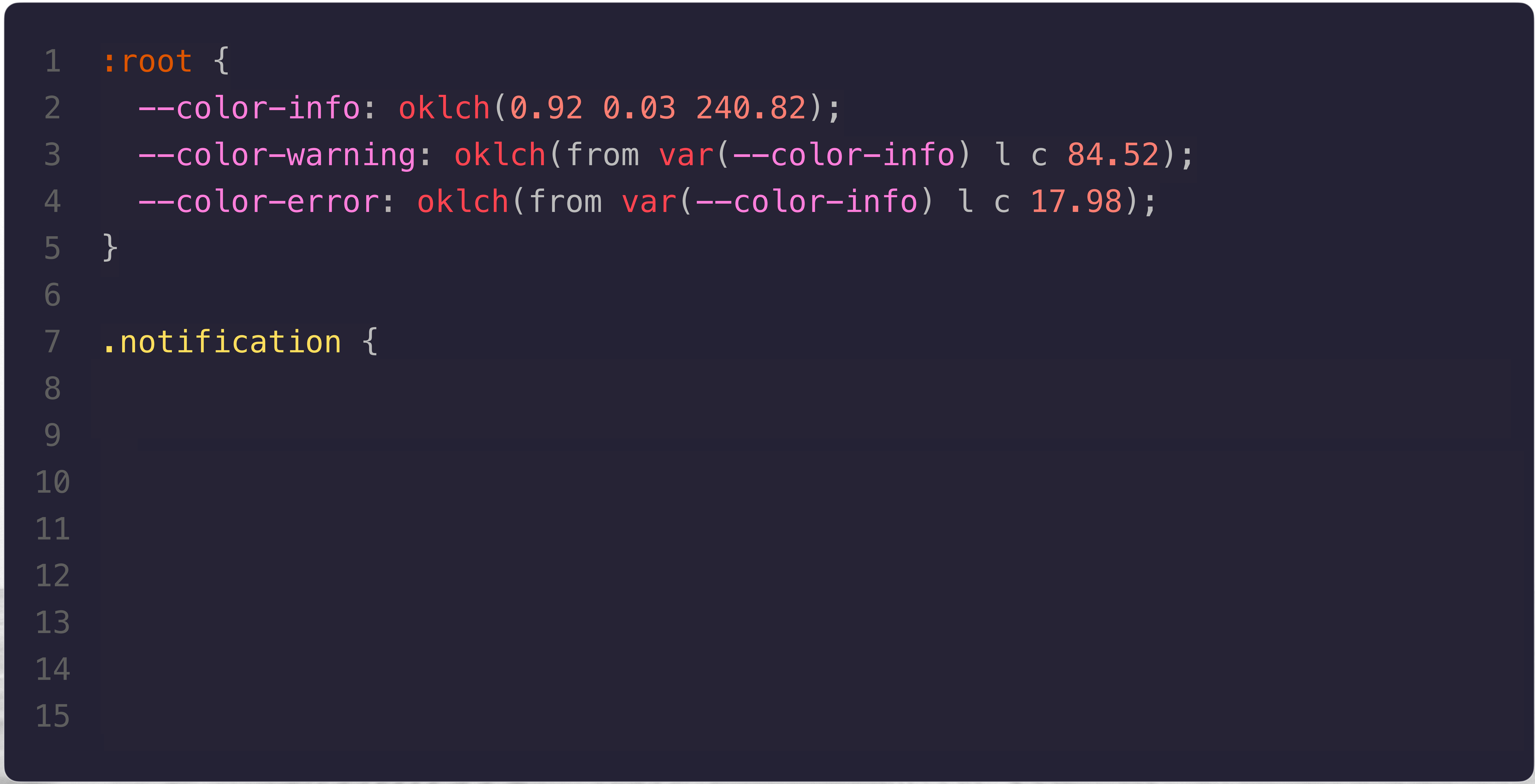
matuzo.social

```
:root {
  background-color: rgb(from var(--color)
                     calc(r * .3 + g * .59 + b * .11)
                     calc(r * .3 + g * .59 + b * .11)
                     calc(r * .3 + g * .59 + b * .11));
 }
```

119 119 128 16.4

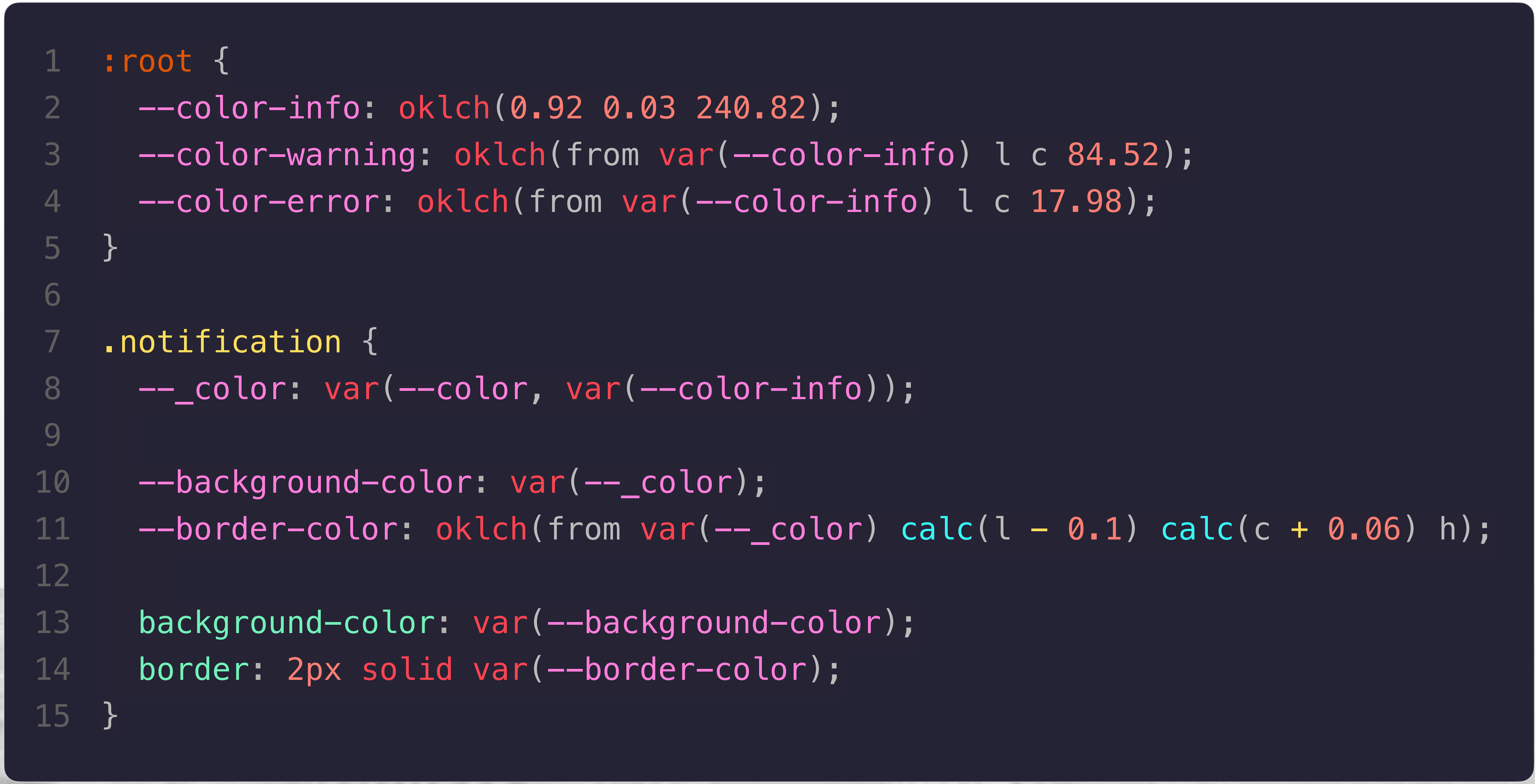


```css
.notification {
  --h: 206deg;
  --s: 74%;
  --l: 90%;

  --background-color: hsl(var(--h) var(--s) var(--l));
  --border-color: hsl(var(--h) var(--s) calc(var(--l) - 20%));

  background-color: var(--background-color);
  border: 2px solid var(--border-color);
}
```



```
:root {
  --color-info: oklch(0.92 0.03 240.82);
  --color-warning: oklch(from var(--color-info) l c 84.52);
  --color-error: oklch(from var(--color-info) l c 17.98);
}

.notification {
```

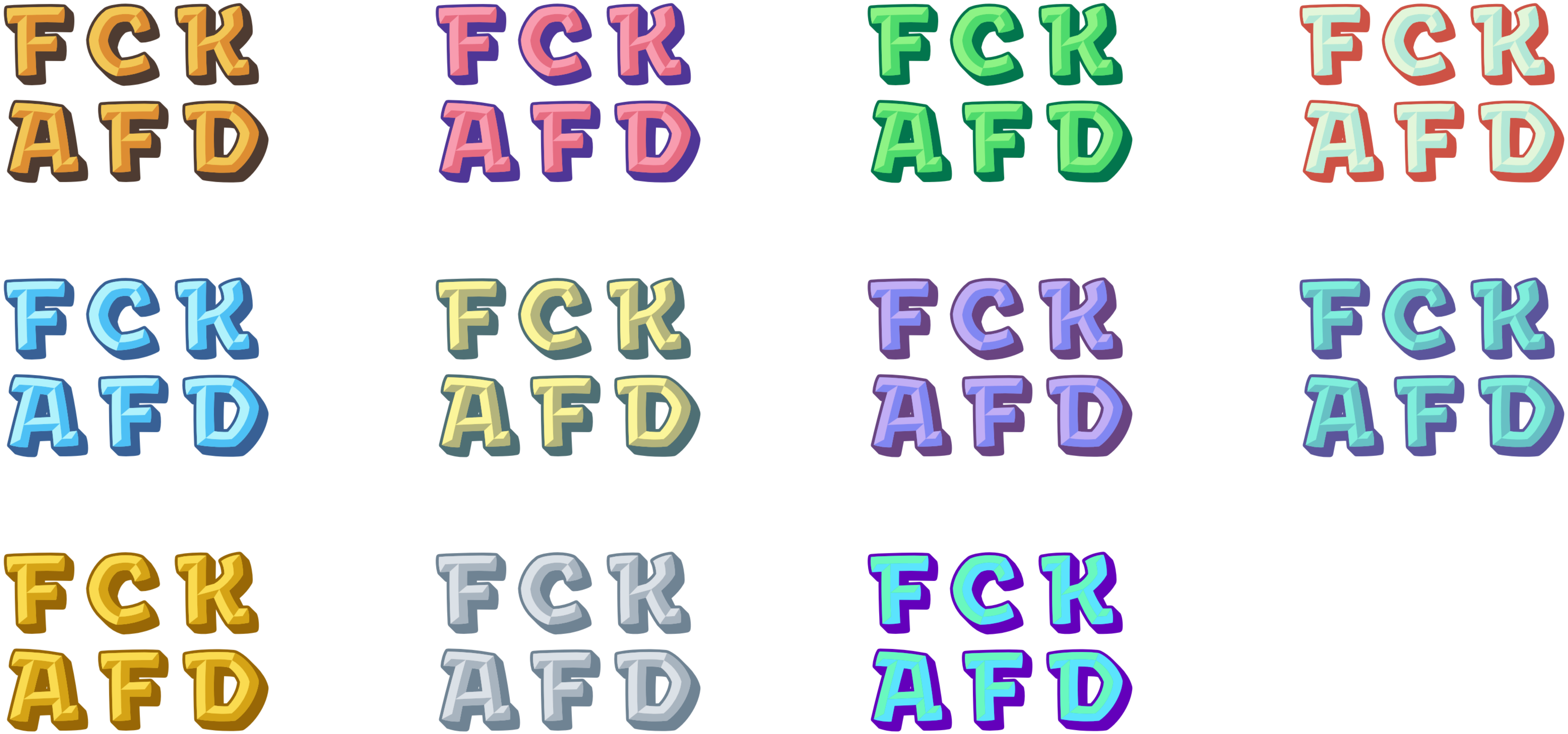
```css
:root {
  --color-info: oklch(0.92 0.03 240.82);
  --color-warning: oklch(from var(--color-info) l c 84.52);
  --color-error: oklch(from var(--color-info) l c 17.98);
}

.notification {
  --_color: var(--color, var(--color-info));
```



```css
:root {
  --color-info: oklch(0.92 0.03 240.82);
  --color-warning: oklch(from var(--color-info) l c 84.52);
  --color-error: oklch(from var(--color-info) l c 17.98);
}

.notification {
  --_color: var(--color, var(--color-info));

  --background-color: var(--_color);
  --border-color: oklch(from var(--_color) calc(l - 0.1) calc(c + 0.06) h);

  background-color: var(--background-color);
  border: 2px solid var(--border-color);
}
```

COLOR FONTS

FCK
AFD


FCK
AFD
FCK
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FCK
AFD
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AFD
FCK
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FCK
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FCK
AFD
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AFD
FCK
AFD
FCK
AFD

```css
@font-palette-values --pink {
  font-family: 'Rocher';
  base-palette: 1;
}

@font-palette-values --green {
  font-family: 'Rocher';
  base-palette: 2;
}

@font-palette-values --gray {
  font-family: 'Rocher';
  base-palette: 9;
}

h1 {
  font-palette: --pink;
}
```

101 101 107 15.4

WAKAMAI FONDUE
WAKAMAI FONDUE
WAKAMAI FONDUE

Drop a font!

Fonts aren't uploaded,
they stay on your computer

Favourites

- Dropbox
- AirDrop
- Applications
- Recents
- Desktop
- Downloads
- PMP
- stadt_wien
- Sonstiges
- redesign
- modern-css
- Rein
- web-accessibility-cookbook

Desktop

Name	Date Modified
--	Today at 11:37
RocherC...GX.woff2	17.10.2018 at 11:55

More...

iCloud Drive › Desktop › RocherColorGX.woff2

1 of 2 selected, 23,52 GB available on iCloud

wakamaifondue.com

WAKAMAI FONDUE
WAKAMAI FONDUE
WAKAMAI FONDUE
Favourites
Dropbox
AirDrop
Applications
Recents
Desktop
Downloads
PMP
stadt_wien
Sonstiges
redesign
modern-css
Rein
web-accessibility-cookbook
Desktop
Desktop
More...

Drop a font!

Fonts aren't uploaded,
they stay on your computer

Name	Date Modified
--	Today at 11:37
RocherC...GX.woff2	17.10.2018 at 11:55

iCloud Drive › Desktop › RocherColorGX.woff2

1 of 2 selected, 23,52 GB available on iCloud

wakamaifondue.com

```css
@font-palette-values --gray {
  font-family: 'Rocher';
  base-palette: 9;

  override-colors: 3 rgb(21 58 81);
}
```

101 101 107 15.4

```css
@font-palette-values --custom {
  font-family: 'Rocher';
  base-palette: 0;

  override-colors:
    0 hotpink,
    1 red,
    2 rebeccapurple,
    3 aqua;
}
```

101 101 107 15.4

FCK
TRMP

COLOR SCHEMES

CodePen - Untitled
cdpn.io/pen/debug/YzmLKvY
New Chrome available
Elements
1
8
html
body
Styles
Computed
Layout
Event Listeners
Filte
:hov
.cls
8
er
–
adding
32
2
476×226.875
3
32
–
8
F
Show

Survey

What are your favorite sports?

☑ Squash

□ Squash

□ Squash

□ Squash

```
<!DOCTYPE html>
<html lang="en">
  ▶<head>…</head>
… ▼<body> == $0
    <h1>Survey</h1>
    <p> What are your favorite sports? </p>
   ▶<div>…</div>
```

```
element.style {
}
body {                                   YzmLKvY:18
  font-family: sans-serif;
  padding: ▶ 2rem;
  line-height: 1.5;
}
body {                     user agent stylesheet
  display: block;
  margin: ▶ 8px;
}
```

```
accent-color
auto
align-conte…
normal
align-items
normal
align-self
auto
```

CodePen - Untitled
cdpn.io/pen/debug/YzmLKvY
New Chrome available
Elements
1
8
html
body
Styles
Computed
Layout
Event Listeners
Filte
:hov
.cls
8
er
–
adding
32
2
476×226.875
3
32
–
8
F
Show

Survey

What are your favorite sports?

☑ Squash
□ Squash
□ Squash
□ Squash

```
<!DOCTYPE html>
<html lang="en">
  ▶<head> ••• </head>
••• ▼<body> == $0
      <h1>Survey</h1>
      <p> What are your favorite sports? </p>
    ▶<div> ••• </div>
```

```
element.style {
}
body {                                    YzmLKvY:18
  font-family: sans-serif;
  padding: ▶ 2rem;
  line-height: 1.5;
}
body {                      user agent stylesheet
  display: block;
  margin: ▶ 8px;
}
```

```
accent-color
auto
align-conte…
normal
align-items
normal
align-self
auto
```

```css
:root {
  color-scheme: light dark;
}
```

81 81 96 13

```css
:root {
  color-scheme: light dark;
}
```

```html
<head>
  <meta name="color-scheme" content="light dark">
</head>
```

81 81 96 13

CodePen - Untitled
cdpn.io/pen/debug/YzmLKvY
New Chrome available

Survey

What are your favorite sports?

☑ Squash
□ Squash
□ Squash
□ Squash

Elements
1
8

```
<!DOCTYPE html>
<html lang="en">
  ▶<head> ••• </head>
••• ▼<body> == $0
      <h1>Survey</h1>
      <p> What are your favorite sports? </p>
    ▶<div> ••• </div>
```

html
body
Styles
Computed
Layout
Event Listeners
Filte
:hov
.cls

```
element.style {
}
body {                          YzmLKvY:18
  font-family: sans-serif;
  padding: ▶ 2rem;
  line-height: 1.5;
}
body {              user agent stylesheet
  display: block;
  margin: ▶ 8px;
}
Inherited from html
:root {                         YzmLKvY:24
  color-scheme: light dark;
}
```

8
er
–
adding 32
2
476×226.875
3
32
–
8
F
☑ Show

```
accent-color
auto
align-conte…
normal
align-items
normal
align-self
auto
```

CodePen - Untitled
cdpn.io/pen/debug/YzmLKvY
New Chrome available
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er
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476×226.875
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32
–
8
F
Show

Survey

What are your favorite sports?

☑ Squash
□ Squash
□ Squash
□ Squash

```
<!DOCTYPE html>
<html lang="en">
  ▶<head>…</head>
••• ▼<body> == $0
    <h1>Survey</h1>
    <p> What are your favorite sports? </p>
   ▶<div>…</div>
```

```
element.style {
}
body {                              YzmLKvY:18
  font-family: sans-serif;
  padding: ▶ 2rem;
  line-height: 1.5;
}
body {                 user agent stylesheet
  display: block;
  margin: ▶ 8px;
}
Inherited from html
:root {                             YzmLKvY:24
  color-scheme: light dark;
}
```

```
accent-color
auto
align-conte…
normal
align-items
normal
align-self
auto
```

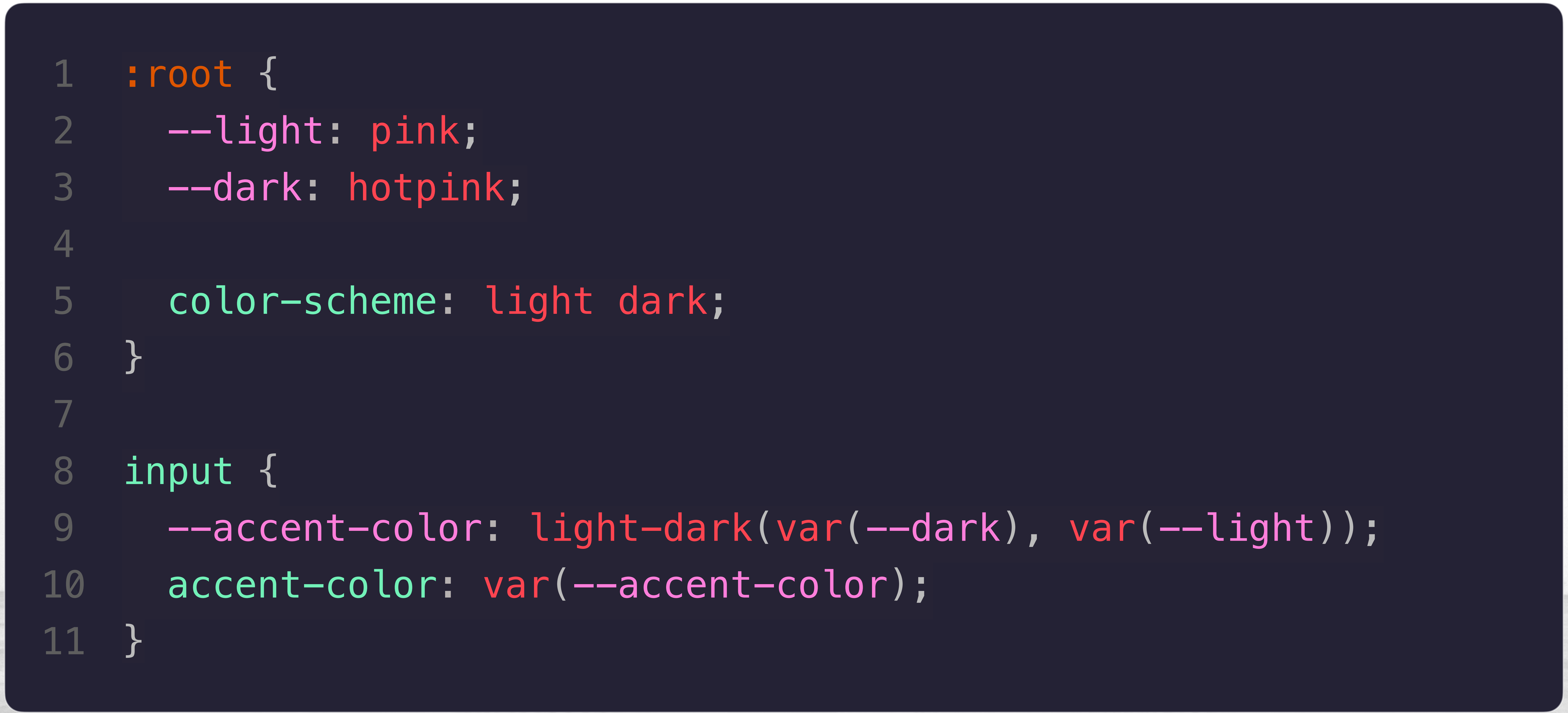
```css
:root {
  --light: pink;
  --dark: hotpink;

  color-scheme: light dark;
}

input {
  --accent-color: var(--dark);
  accent-color: var(--accent-color);
}

@media(prefers-color-scheme: dark) {
  input {
    --accent-color: var(--light);
  }
}
```

76 79 67 12.1



```css
:root {
  --light: pink;
  --dark: hotpink;

  color-scheme: light dark;
}

input {
  --accent-color: light-dark(var(--dark), var(--light));
  accent-color: var(--accent-color);
}
```

123 123 120 17.5

CodePen - Untitled
cdpn.io/pen/debug/YzmLKvY
New Chrome available
Elements
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8
html
body
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Computed
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Filter
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Show

Survey

What are your favorite sports?

☑ Squash
□ Squash
□ Squash
□ Squash

```
<!DOCTYPE html>
<html lang="en">
  ▶<head>…</head>
••• ▼<body> == $0
    <h1>Survey</h1>
    <p> What are your favorite sports? </p>
   ▶<div>…</div>
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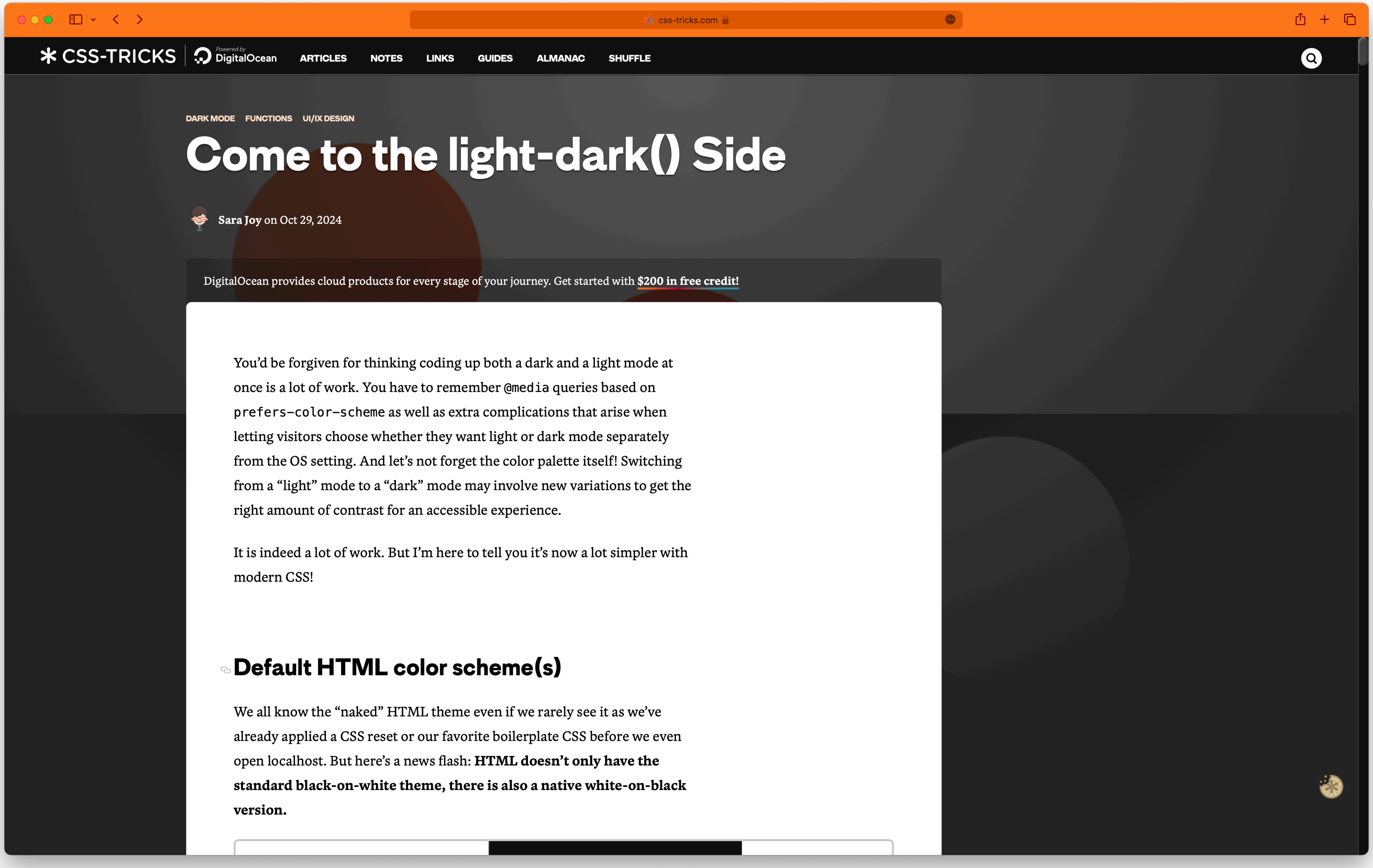

Come to the light-dark() Side

Sara Joy on Oct 29, 2024

DigitalOcean provides cloud products for every stage of your journey. Get started with **$200 in free credit!**

You'd be forgiven for thinking coding up both a dark and a light mode at once is a lot of work. You have to remember `@media` queries based on `prefers-color-scheme` as well as extra complications that arise when letting visitors choose whether they want light or dark mode separately from the OS setting. And let's not forget the color palette itself! Switching from a "light" mode to a "dark" mode may involve new variations to get the right amount of contrast for an accessible experience.

It is indeed a lot of work. But I'm here to tell you it's now a lot simpler with modern CSS!

Default HTML color scheme(s)

We all know the "naked" HTML theme even if we rarely see it as we've already applied a CSS reset or our favorite boilerplate CSS before we even open localhost. But here's a news flash: **HTML doesn't only have the standard black-on-white theme, there is also a native white-on-black version.**

css-tricks.com/come-to-the-light-dark-side/

MEDIA FEATURES

```css
dialog {
  background: oklch(1 0 0 / var(--bg-opacity, 1));
  backdrop-filter: blur(5px);
}

@media(prefers-reduced-transparency: no-preference) {
  dialog {
    --bg-opacity: 0.2;
  }
}
```

118 118

I Am The Eradicator One Rung At A Time The End Of The Line I'm A Squash
Man Squash Queen The Grandfather Of Squash I Live, I Die, I Live Again It's
Your Right Wake, Hydrate, Baby Aspirin, Squash A Pusshead, Stretch, Sleep,
Repeat My Mighty Scream Stop Dreaming, Start Living Civilian/Champion I Am
The Eradicator One Rung At A Time The End Of The Line I'm A Squash Man
Squash Queen The Grandfather Of Squash I Live, I Die, I Live Again It's Your
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Queen The Grandfather Of Squash I Live, I Die, I Live Again It's Your Right
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Mighty Scr The
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Queen The ight
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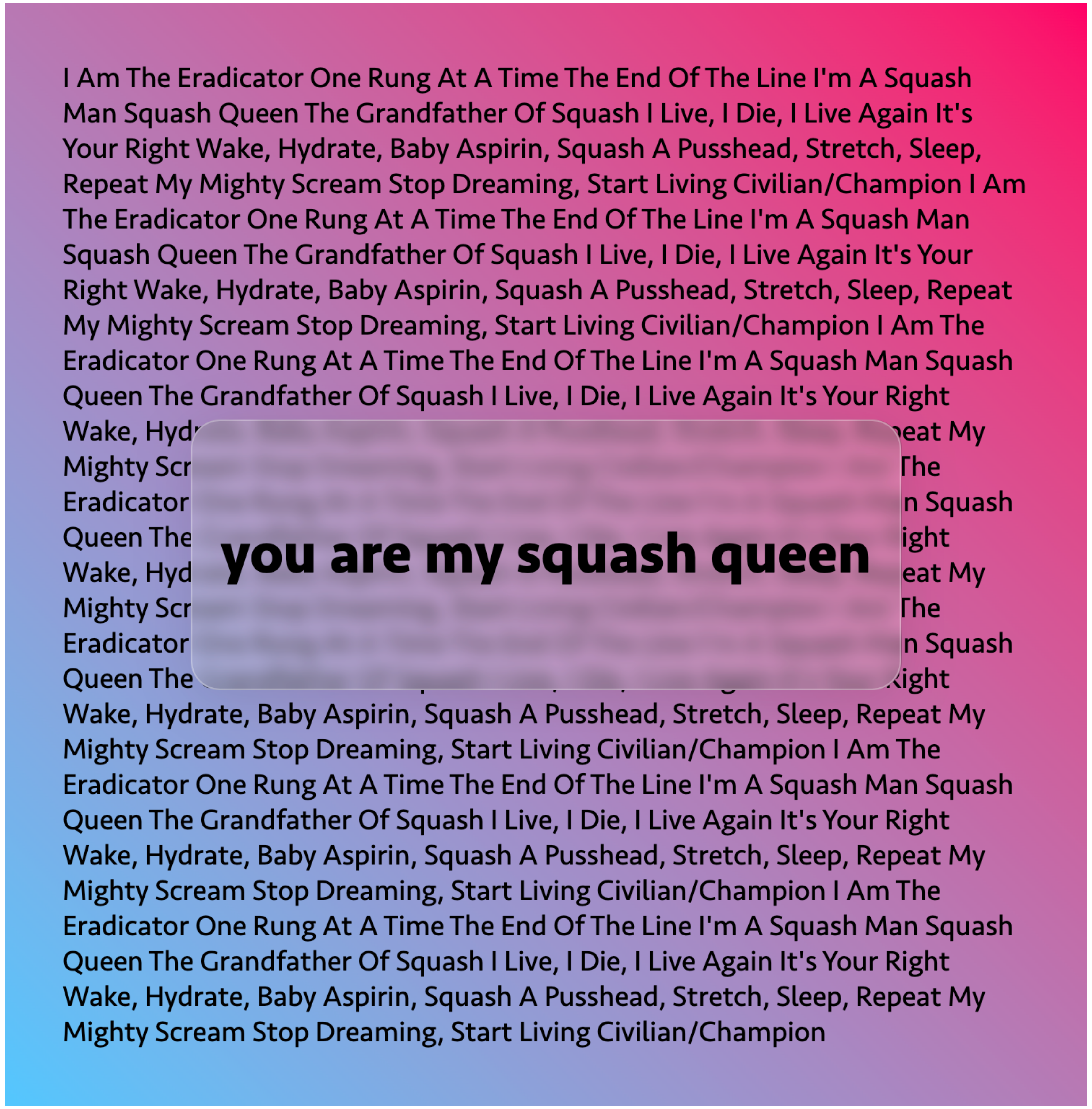
you are my squash queen



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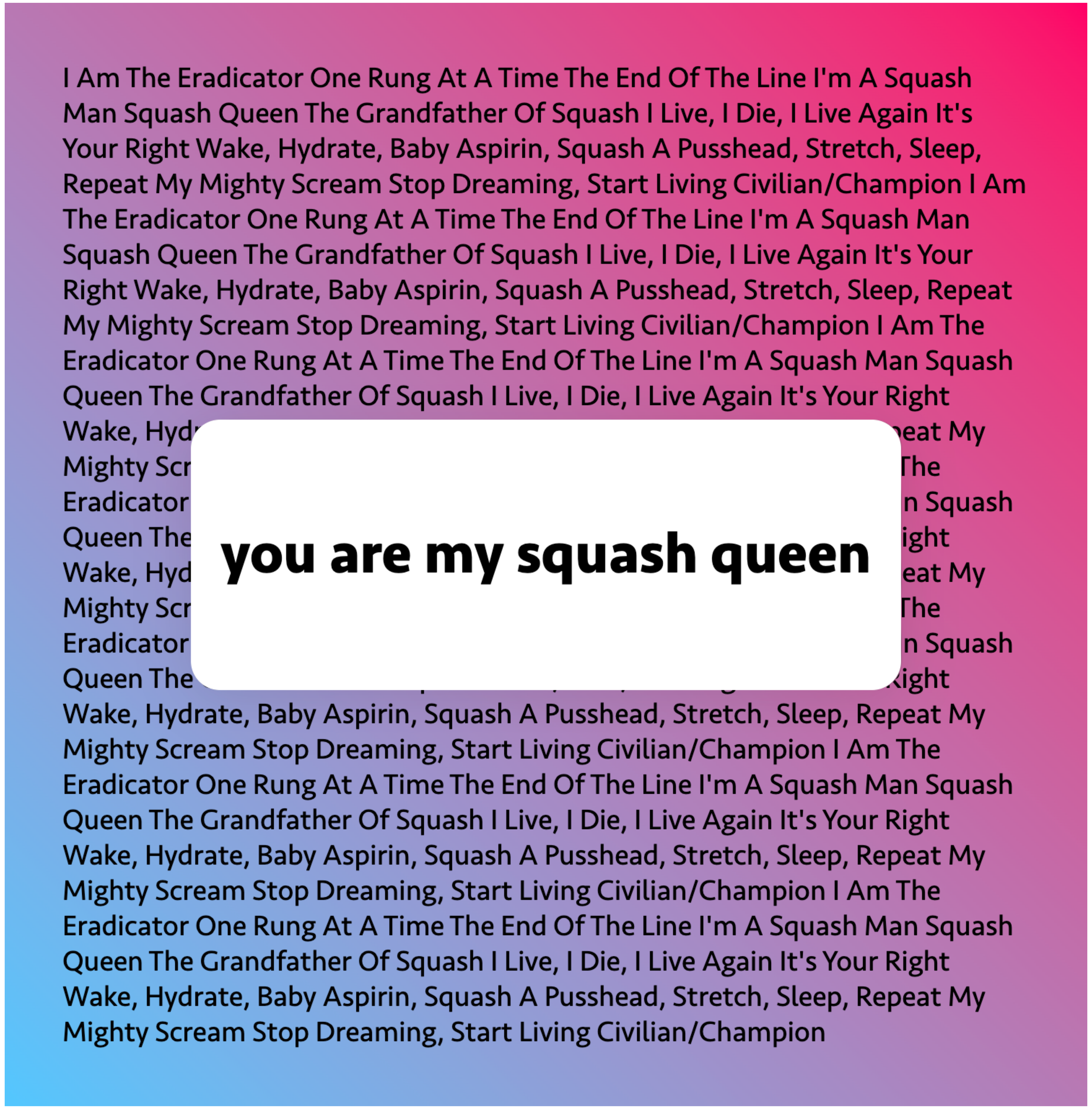

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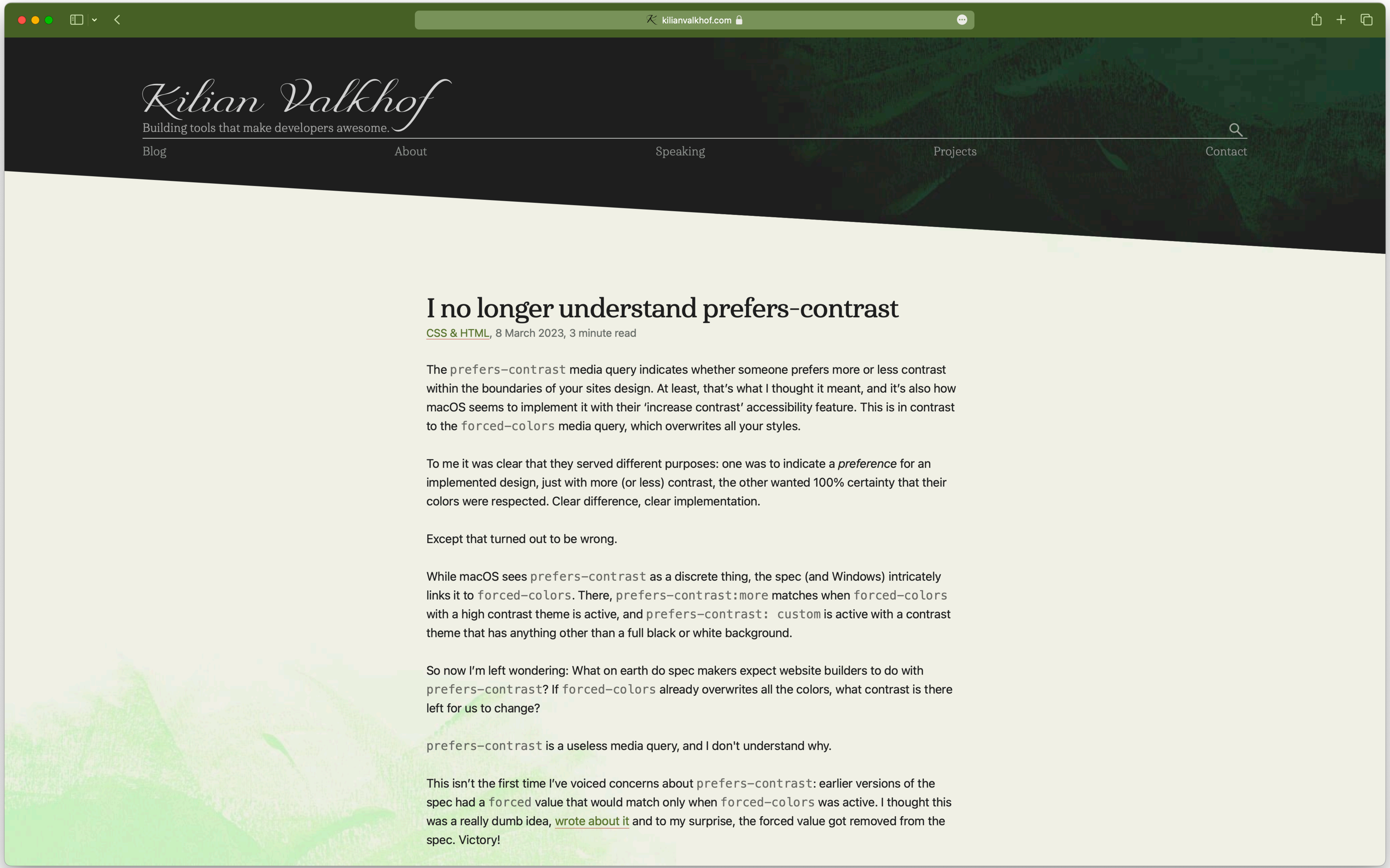
you are my squash queen

```
@media (prefers-contrast: more) {
  :root {
    --text-color: oklch(1 0 0);
  }
}
```

96 96 101 14.1



I no longer understand prefers-contrast

CSS & HTML, 8 March 2023, 3 minute read

The `prefers-contrast` media query indicates whether someone prefers more or less contrast within the boundaries of your sites design. At least, that's what I thought it meant, and it's also how macOS seems to implement it with their 'increase contrast' accessibility feature. This is in contrast to the `forced-colors` media query, which overwrites all your styles.

To me it was clear that they served different purposes: one was to indicate a *preference* for an implemented design, just with more (or less) contrast, the other wanted 100% certainty that their colors were respected. Clear difference, clear implementation.

Except that turned out to be wrong.

While macOS sees `prefers-contrast` as a discrete thing, the spec (and Windows) intricately links it to `forced-colors`. There, `prefers-contrast:more` matches when `forced-colors` with a high contrast theme is active, and `prefers-contrast: custom` is active with a contrast theme that has anything other than a full black or white background.

So now I'm left wondering: What on earth do spec makers expect website builders to do with `prefers-contrast`? If `forced-colors` already overwrites all the colors, what contrast is there left for us to change?

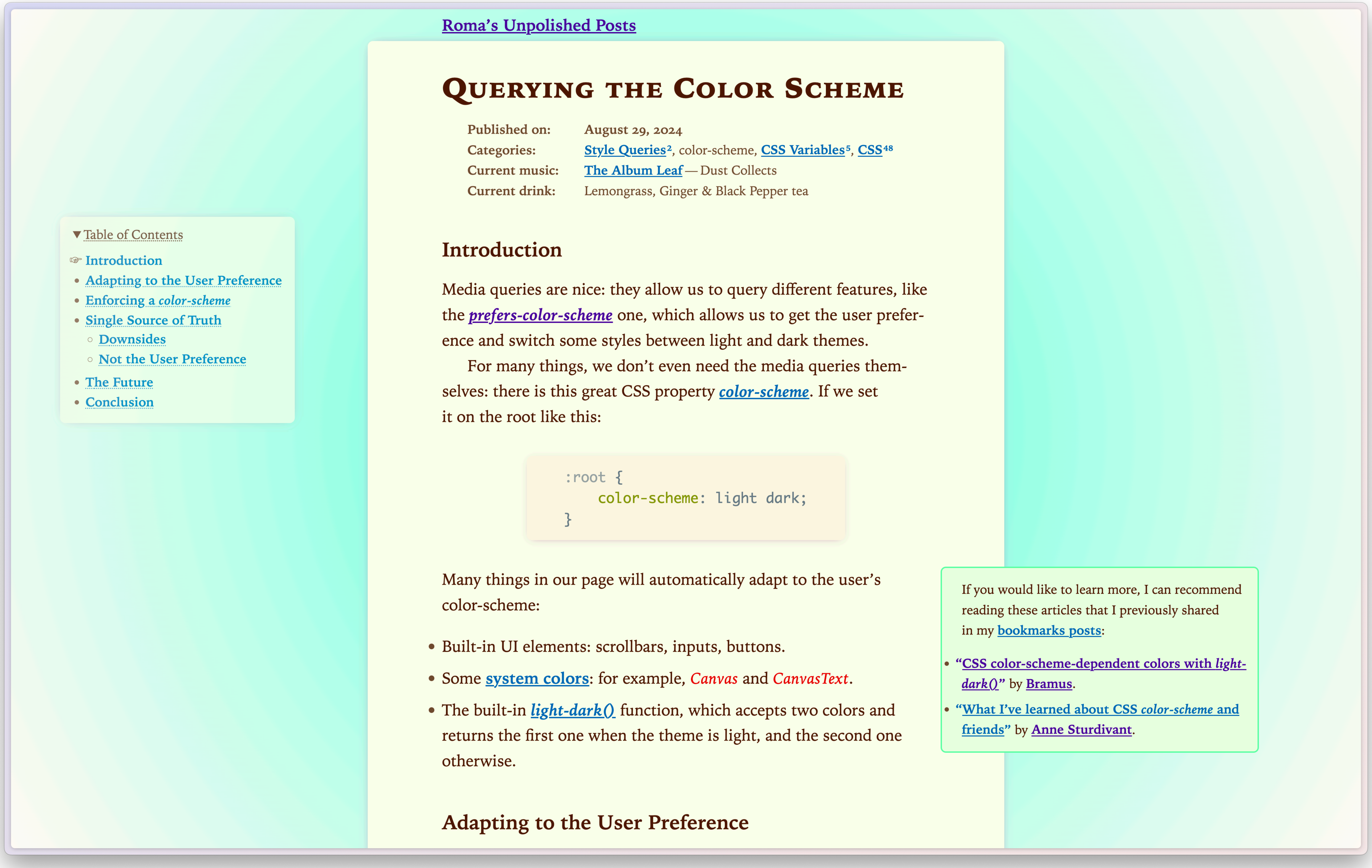
`prefers-contrast` is a useless media query, and I don't understand why.

This isn't the first time I've voiced concerns about `prefers-contrast`: earlier versions of the spec had a `forced` value that would match only when `forced-colors` was active. I thought this was a really dumb idea, wrote about it and to my surprise, the forced value got removed from the spec. Victory!

kilianvalkhof.com/2023/css-html/i-no-longer-understand-prefers-contrast

```css
@media (forced-colors: active) {
  button {
    border: 2px solid ButtonText;
  }
}
```

89 79 89 16



Roma’s Unpolished Posts

Querying the Color Scheme

Published on:	August 29, 2024
Categories:	Style Queries^{2}, color-scheme, CSS Variables^{5}, CSS^{48}
Current music:	The Album Leaf — Dust Collects
Current drink:	Lemongrass, Ginger & Black Pepper tea

▼ Table of Contents

Introduction

Media queries are nice: they allow us to query different features, like the *prefers-color-scheme* one, which allows us to get the user preference and switch some styles between light and dark themes.

For many things, we don’t even need the media queries themselves: there is this great CSS property *color-scheme*. If we set it on the root like this:

```
:root {
    color-scheme: light dark;
}
```

Many things in our page will automatically adapt to the user’s color-scheme:

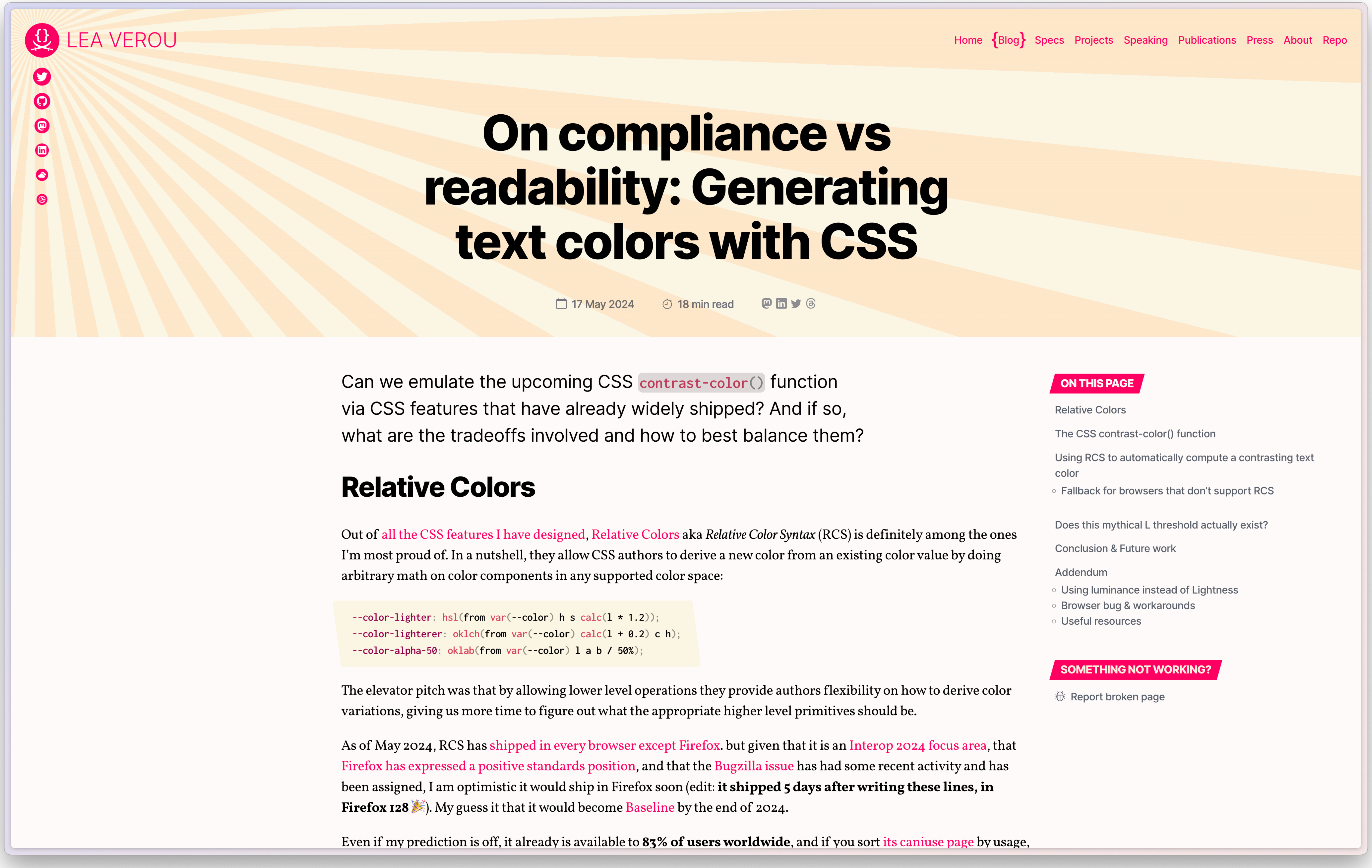
- Built-in UI elements: scrollbars, inputs, buttons.
- Some system colors: for example, *Canvas* and *CanvasText*.
- The built-in *light-dark()* function, which accepts two colors and returns the first one when the theme is light, and the second one otherwise.

If you would like to learn more, I can recommend reading these articles that I previously shared in my bookmarks posts:

- “CSS color-scheme-dependent colors with *light-dark()*” by Bramus.
- “What I’ve learned about CSS *color-scheme* and friends” by Anne Sturdivant.

Adapting to the User Preference

blog.kizu.dev/querying-the-color-scheme/



On compliance vs readability: Generating text colors with CSS

Can we emulate the upcoming CSS `contrast-color()` function via CSS features that have already widely shipped? And if so, what are the tradeoffs involved and how to best balance them?

Relative Colors

Out of all the CSS features I have designed, Relative Colors aka *Relative Color Syntax* (RCS) is definitely among the ones I'm most proud of. In a nutshell, they allow CSS authors to derive a new color from an existing color value by doing arbitrary math on color components in any supported color space:

```
--color-lighter: hsl(from var(--color) h s calc(l * 1.2));
--color-lighterer: oklch(from var(--color) calc(l + 0.2) c h);
--color-alpha-50: oklab(from var(--color) l a b / 50%);
```

The elevator pitch was that by allowing lower level operations they provide authors flexibility on how to derive color variations, giving us more time to figure out what the appropriate higher level primitives should be.

As of May 2024, RCS has shipped in every browser except Firefox. but given that it is an Interop 2024 focus area, that Firefox has expressed a positive standards position, and that the Bugzilla issue has had some recent activity and has been assigned, I am optimistic it would ship in Firefox soon (edit: **it shipped 5 days after writing these lines, in Firefox 128** 🎉). My guess it that it would become Baseline by the end of 2024.

Even if my prediction is off, it already is available to **83% of users worldwide**, and if you sort its caniuse page by usage,

ON THIS PAGE

SOMETHING NOT WORKING?

Report broken page

lea.verou.me/blog/2024/contrast-color/

MATUZOVIĆ

FRONT-END / A11Y / HTML / CSS

Thank you! ❤️

accessibility-cookbook.com

matuzo.social

htmhell.dev

matuzo.at

manuel@matuzo.at