Mixing

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// create a value of 0. or 1. from the value of x wrt edge:
float t = step( float edge, float x );

// create a value in the range 0. to 1. from the value of x wrt edge0 and edge1:
float t = smoothstep( float edge0, float edge1, float x );

// use the returned value from step() or smoothstep() to blend value0 to value1:
T out = mix( T value0, T value1, float t );

“SmoothPulse” in a Fragment Shader

void main() {
    float f = fract( uA*vX );
    float t = smoothstep( 0.5-uP-uTol, 0.5-uP+uTol, f ) - smoothstep( 0.5+uP-uTol, 0.5+uP+uTol, f );
    gl_FragColor = mix( WHITE, vColor, t );
    gl_FragColor.rgb *= vLightIntensity;
}

Fun With One

Moral: There are many ways to turn \([ 0. - 1. ]\) into \([ 0. - 1. ]\).
Why Do These Two Curves Match So Closely?

The Taylor Series expansion of $y = \sin\left(\frac{\pi}{2}x\right)$ around $x=0.5$ is:

$$y = \left(1 - \frac{\pi^2}{4} + \frac{\pi^4}{240}\right)x^2 + \left(\frac{\pi^2}{8} - \frac{\pi^4}{48}\right)x^4 - \frac{\pi^2}{12}x^6$$

which is pretty close to: $y = 3x^2 - 2x^4$

Both go from 0 to 1.
Both have initial and final slopes of 0.
The quintic has initial and final curvatures of 0.