The Straddle (Buffy) Effect in temporal contrast processing (adaptation) is spatially very local
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» THE BASIC PSYCHOPHYSICAL TRIAL «

The Test pattern is difficult to perceive correctly when its contrasts STRADDLE the Adapt contrast.
The Test pattern is easy to perceive correctly when both its contrasts are ABOVE or both are BELOW the Adapt contrast.

OBSERVER’S TASK:
Identify global (2nd order) orientation
Correct Response: "Horizontal" "Vertical"

» Results subset «

% CORRECT on TEST from 3 observers
99%, 86%, 88%
ABOVE the Adapt contrast
(Test contrasts: 66%, 79%)

57%, 61%, 53%
STRADDLE the Adapt contrast
(Test contrasts: 45%, 59%)

99%, 96%, 91%
BELOW the Adapt contrast
(Test contrasts: 30%, 46%)

» Discussion «

When the spatial characteristics of A and T patterns are identical, there is always a Straddle effect.
When the spatial characteristics of A and T patterns differ more than a small amount, the Straddle effect becomes less dramatic and can disappear.
The way it disappears is NOT that the Straddle Test pattern becomes easier to see correctly, instead the patterns just Above and just Below the Straddle range become much harder to see correctly.
It is as if the visual system encodes the magnitude of the change but NOT the sign of the change. Why?
Is the Straddle Effect a side effect of the visual system having evolved to detect quick changes (i.e., transients)?