„achromatic signal" discrimination as function of relative light density

$h = \ln H = k(u - u_0)$, ln = natural log.

$$Q' = \frac{d}{dH}\left[\ln\{1 + 1/(1 + \sqrt{2}H)\}\right]/\ln\sqrt{2}$$

$$= -\sqrt{2}/[\ln\sqrt{2}\,(1+\sqrt{2}H)(2+\sqrt{2}H)]$$

function values:

$Q'[k(u-u_0) \to +\infty] = 0$

$Q'[k(u-u_0) = 0] = -0{,}5$

$Q'[k(u-u_0) \to -\infty] = 0$