Colour thresholds and potential functions with three constants A_i

nonlinear color terms	**name and relationship of tristimulues value difference threshold *dY* and tristimulues value *Y***	**notes**
Threshold space *ABY−JND9* equation (9) logarithmic approximation ***F = log(dY)***	$x = [\, A_1 + A_3 \cdot Y \,]^g \qquad (g = A_2)$ $F = log(x)$ $dF / dx = 1. / [\, x \cdot log(10) \,]$ *necessary for least square fit of data:* $dx / dA_1 = g \cdot [A_1 + A_3 \cdot Y]^{g-1}$ $dx / dg = [A_1 + A_3 Y]^g \cdot ln[A_1 + A_3 Y]$ $dx / dA_3 = g \cdot Y \cdot [A_1 + A_3 \cdot Y]^{g-1}$ $dx / dY = g \cdot A_3 \cdot [A_1 + A_3 \cdot Y]^{g-1}$	$A_1+A_3Y = \mathbf{1} - s + s\ Y/Y_s$ *this equation defines:* $s = 1 - A_1$ $Y_s = (\, 1 - A_1/A_3)$ $g = A_2 = -1{,}25$ $1/[(1-g)V]\ [L_s/s]^g = 1$ $V = 1/[0{,}036(1-g)L_u^{-0.30}]$ $L_s = 0{,}25\ L_u^{0.705}$ $L_u = 0{,}1 \ldots 1000$ cd/m^2
	$dF / dY = dF / dx \cdot [dx / dY]$ $= \{g \cdot A_3 \cdot [A_1+A_3Y]^{g-1}\}/[x \cdot log(10)] = g \cdot A_3 \cdot [A_1+A_3Y]^{-1}/log(10)$ **for *dF* = 1** (*dY* is logarithmic) : $dY = [x \cdot log(10)\,]/\{g \cdot A_3 \cdot [A_1+A_3Y]^{g-1}\} = log(10)[A_1+A_3Y]/\{gA_3\}$ $Y/dY = \{gA_3Y[A_1+A_3Y]^{g-1}\}/[xlog(10)] = \{gA_3Y\}/\{log(10)[A_1+A_3Y]\}$	