$$n(r) = \begin{cases} n_{\text{ped}} + (n_0 - n_{\text{ped}}) \left(1 - \left(\dfrac{r}{r_{\text{ped}}} \right)^2 \right)^{\alpha_n} & \text{if } r \leq r_{\text{ped}} \\ mr + b & \text{if } r_{\text{ped}} < r \leq a \\ n_{\text{sed}} \cdot e^{\left(\frac{-(r-a)}{\lambda_n} \right)} & \text{other cases} \end{cases}$$

with

$$m = \frac{n_{\text{sed}} - n_{\text{ped}}}{\Delta_{\text{ped}}}, \quad b = n_{\text{sed}} - ma$$