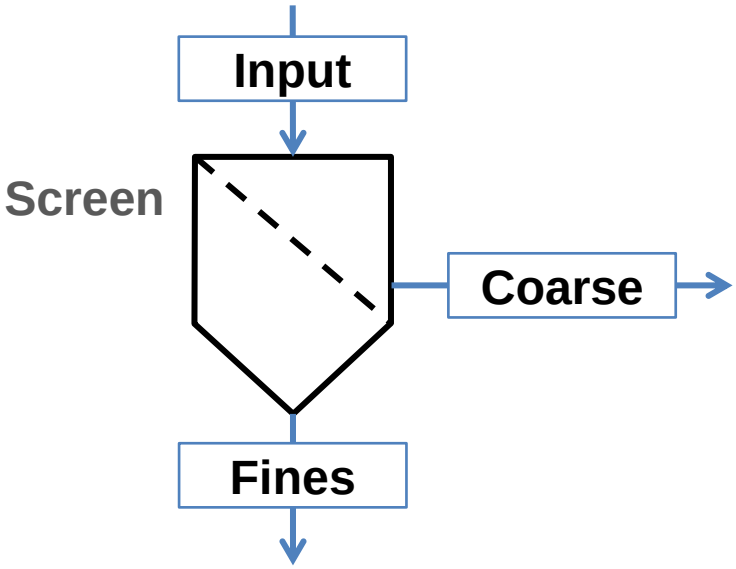
Screen Probability model

General description



Screen unit is designed for classification of input material into two fractions according to the particle size distribution. Grade efficiency of the model is described as

$$\mathrm{G}(x_i) = \frac{\sum_0^{x_i} e^{-\frac{(x_i-\mu)^2}{2\sigma^2}}}{\sum_0^{N} e^{-\frac{(x_i-\mu)^2}{2\sigma^2}}}$$

- $G(x_i)$ is the grade efficiency – a mass fraction of material within the size class i in the feed that leaves the screen in the coarse stream
- x_i is the size of a particle
- σ is the standard deviation of the normal output distribution
- μ is the mean of the normal output distribution
- N is the number of classes of particle size distribution

Unit parameters

Name	Symbol	Description	Units	Valid values
Mean	μ	Mean of the normal output distribution	[m]	Mean > 0
Deviation	σ	Standard deviation of the normal output distribution	[m]	Deviation > 0

Application example

- *Example Flowsheets/Units/Screen Probability.dlfw*

References

R. Radichkov, T. Müller, A. Kienle, S. Heinrich, M. Peglow, L. Mörl, A numerical bifurcation analysis of continuous fluidized bed spray granulation with external product classification, Chemical Engineering and Processing 45 (2006) 826-837.