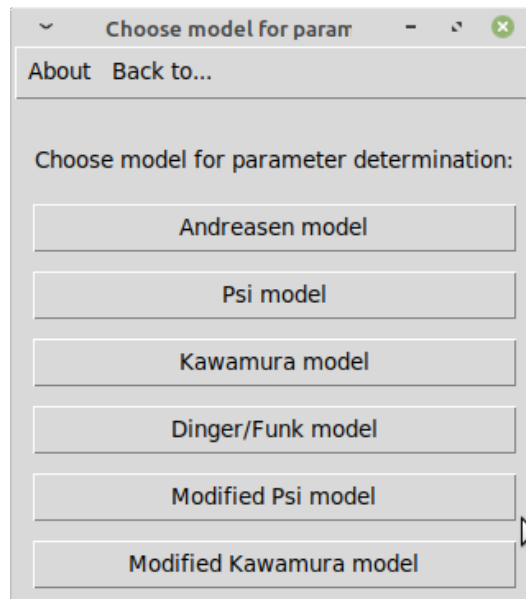
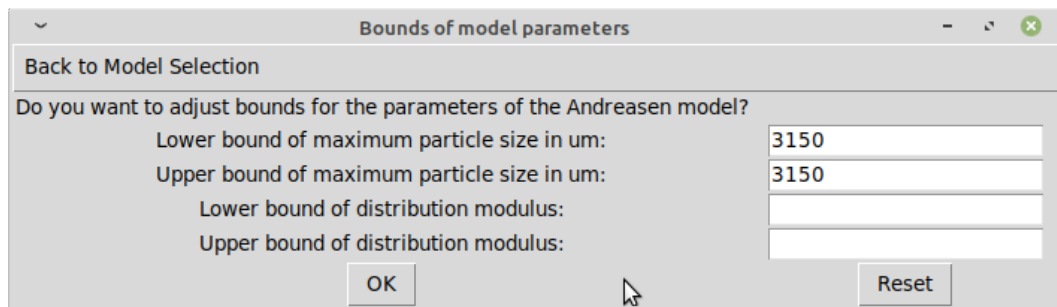


## Definition of bounds for the model parameters

For the model of which the parameters should be calculated to fit a defined batch composition optimally, the bounds are input in a separate window (Figure 1). For the maximum particle size's lower and upper bound, the preset value is the maximum particle size calculable from the given raw materials taking the database's component sizes and the 'percentage of oversized grains'-Setting into consideration. The optimization routine is much simplified, if the diameters required for the models are given and do not have to be fitted, too. The fittings then are also less susceptible to errors.



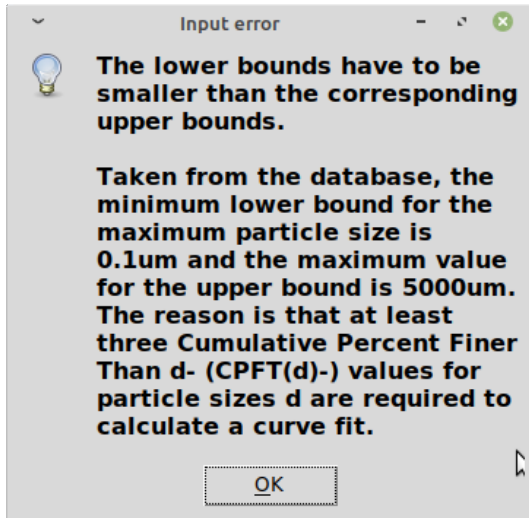
(a) Select model



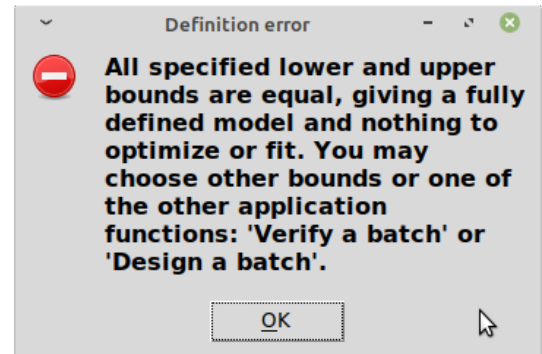
(b) Specify bounds for model parameters

Figure 1: Choose model and specify parameter bounds

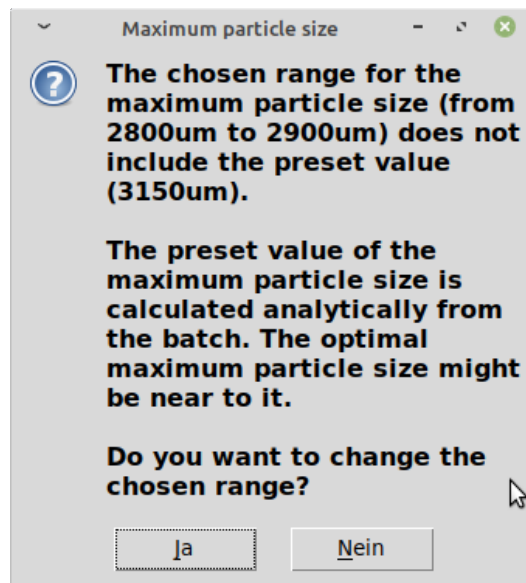
For the inputted bounds, it is checked that lower bounds are smaller or equal to the upper bounds, that not all lower and upper bounds are equal giving a fully defined model and it is checked if the maximum particle size range includes the calculable preset value (Figure 2). This value has not to be giving the best fit, but it can be expected that the optimum maximum particle size is near to it.



(a) Bounds error



(b) Definition error



(c) Maximum particle size inquiry

Figure 2: Possible error messages or inquiries