## (a) Simulation of particle spectra and the creation of the lookup table

Collect a set of  $i_L$ ,  $n_L$  and  $p_L$  by iterating through all realistic combinations of i, assuming a gamma size distribution.



## (b) Look up a result

Create space with a combination of the coordinates (here:  $v_t$ , and w) and fill with the corresponding vectors  $n_L$  and  $i_L$ .

Calculate the distribution of the matching probability in  $(v_t, w)$  space against vector  $\mathbf{m} = (v_{t,M}, w_M)$  measured with errors.



-Coordinate of mostprobable match

## (c)

## Scale normal vectors and combine with P

Retrieve vectors  $\mathbf{r}_L$  of extensive properties by scaling each normal vector of the lookup table with measured  $Z_M$  and the simulated  $Z_1$  so that  $\mathbf{r}_L = \mathbf{n}_L (Z_M / Z_1)$ .

Plot an element of all vectors  $\mathbf{r}_L$  vs matching probability P (example for number concentration).

