

Sparse representation of HARDI Data towards visual exploration

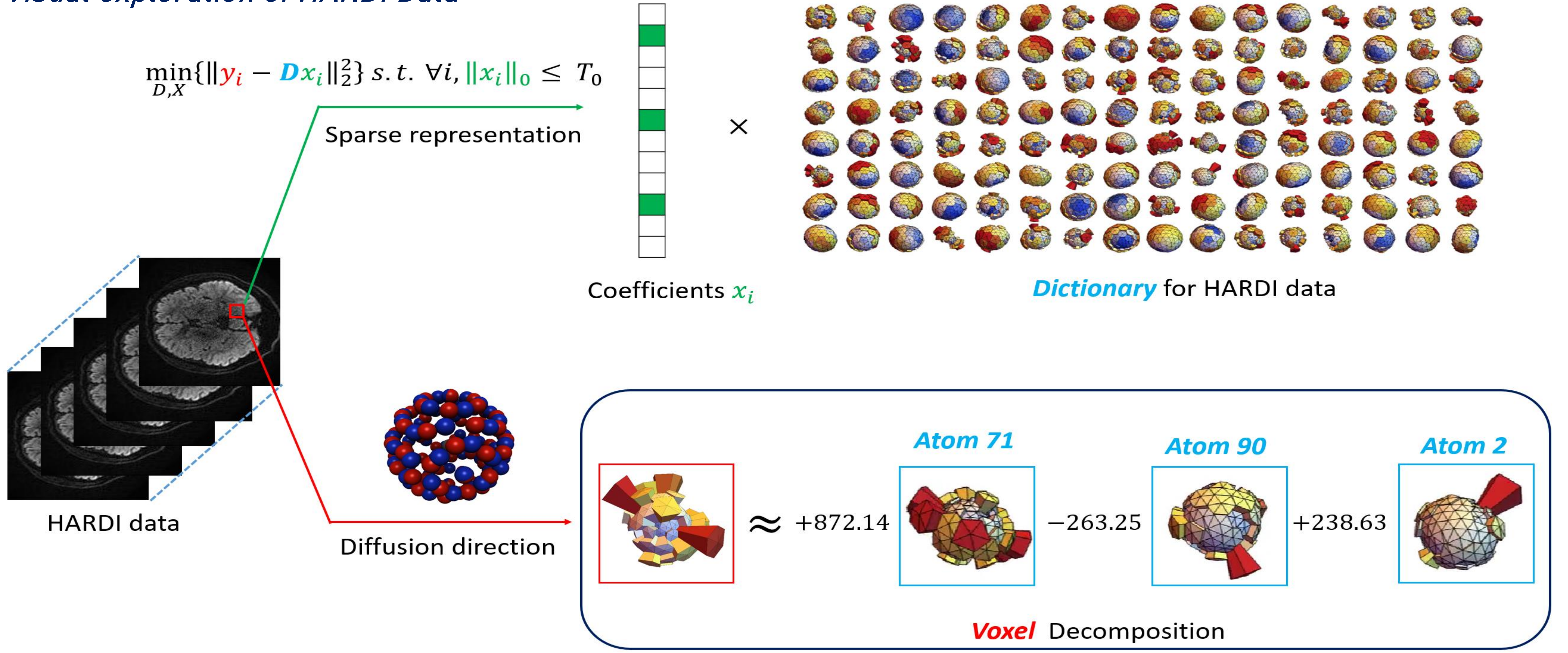
Danhua Lei, Ehsan Miandji, Jonas Unger and Ingrid Hotz



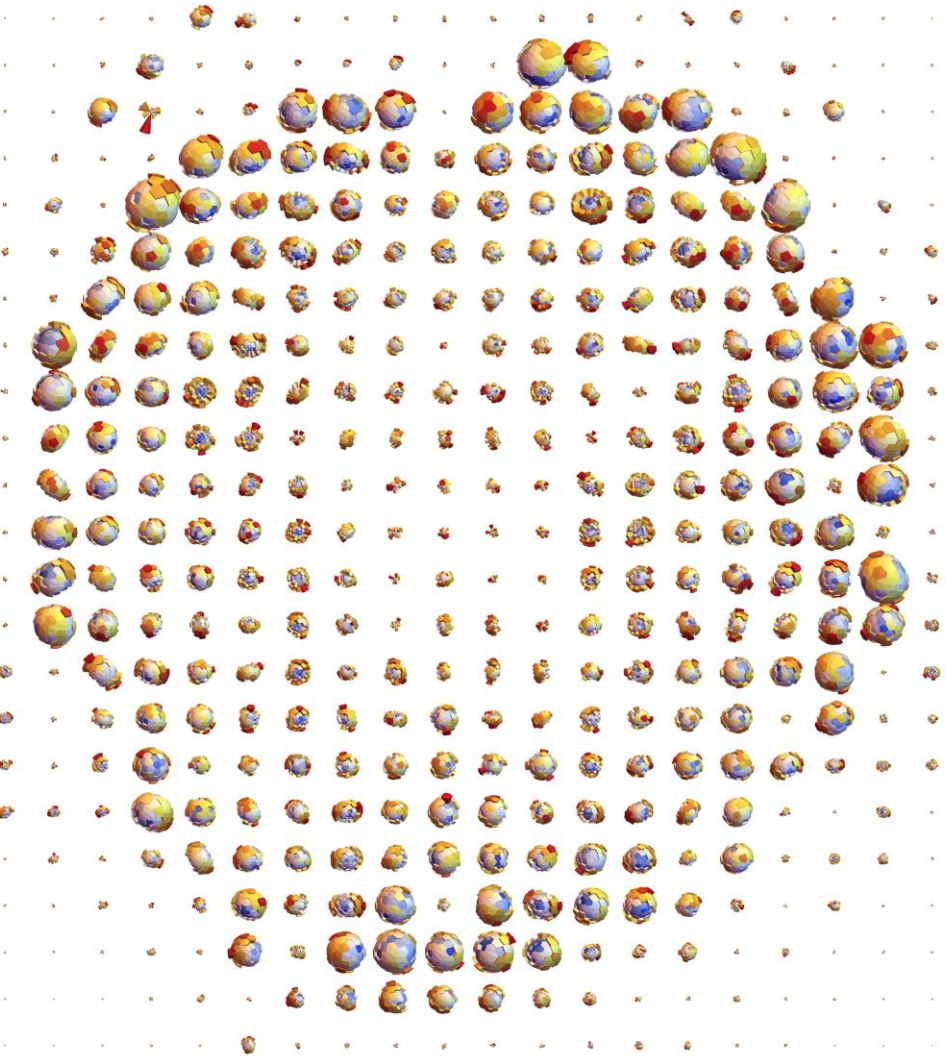
Scientific Visualization Group,
Linköping University, Sweden



Visual exploration of HARDI Data



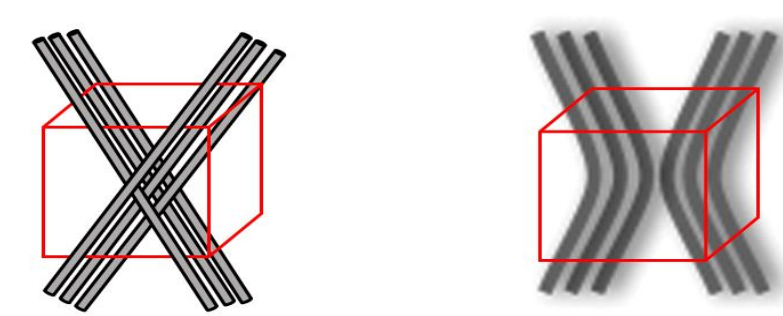
Challenges



Can large and complex HARDI data be compressed?

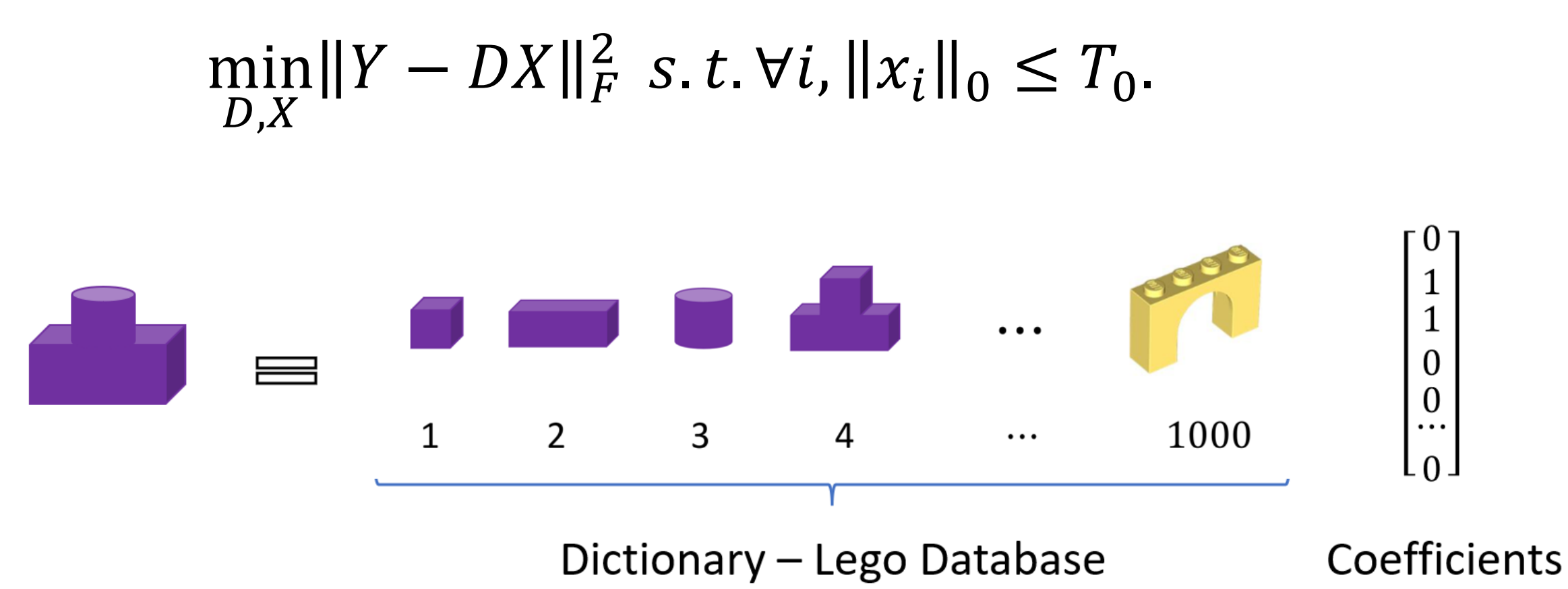
If possible, to what extent can it be compressed?

How reliable when estimating the configuration with indirect measurements?

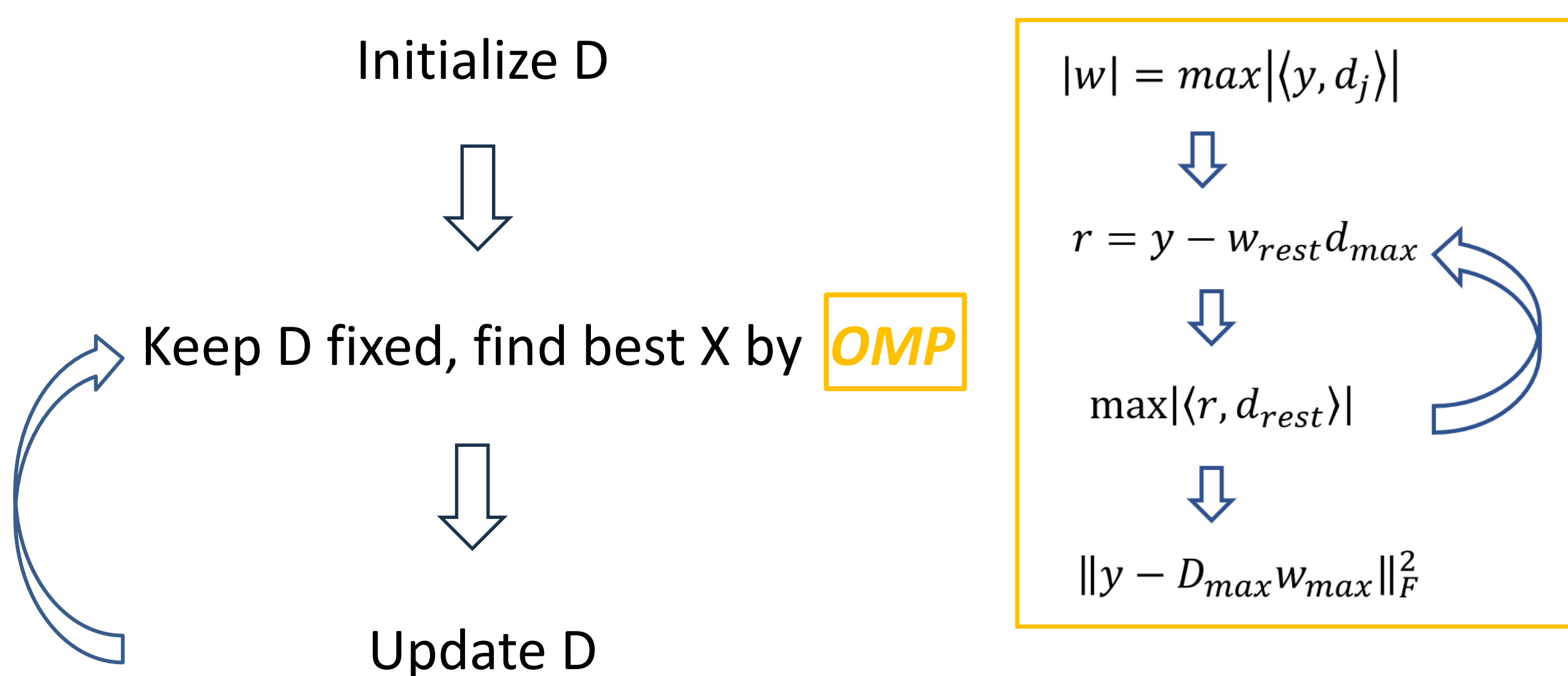


(a) Crossing (b) Kissing

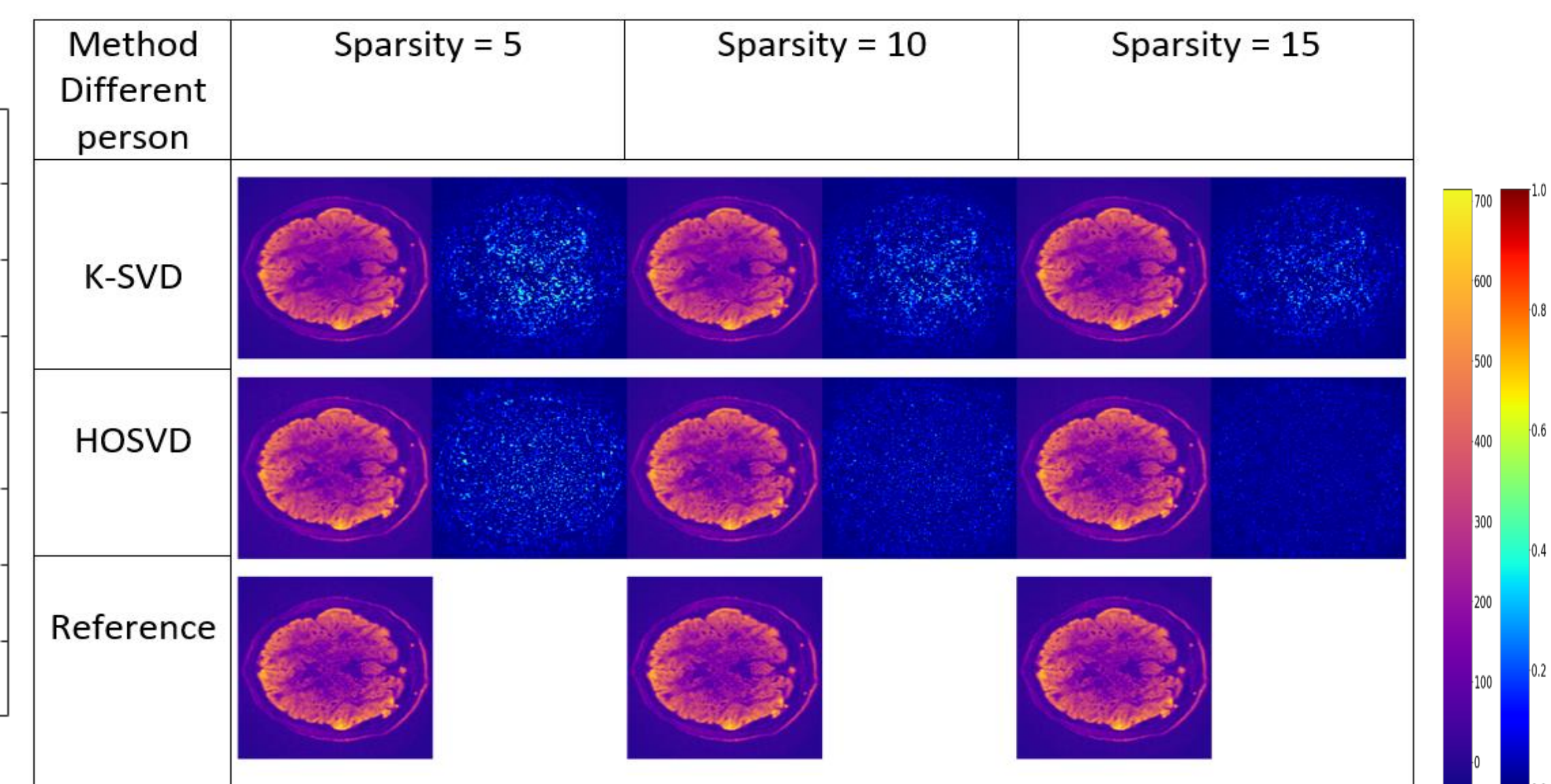
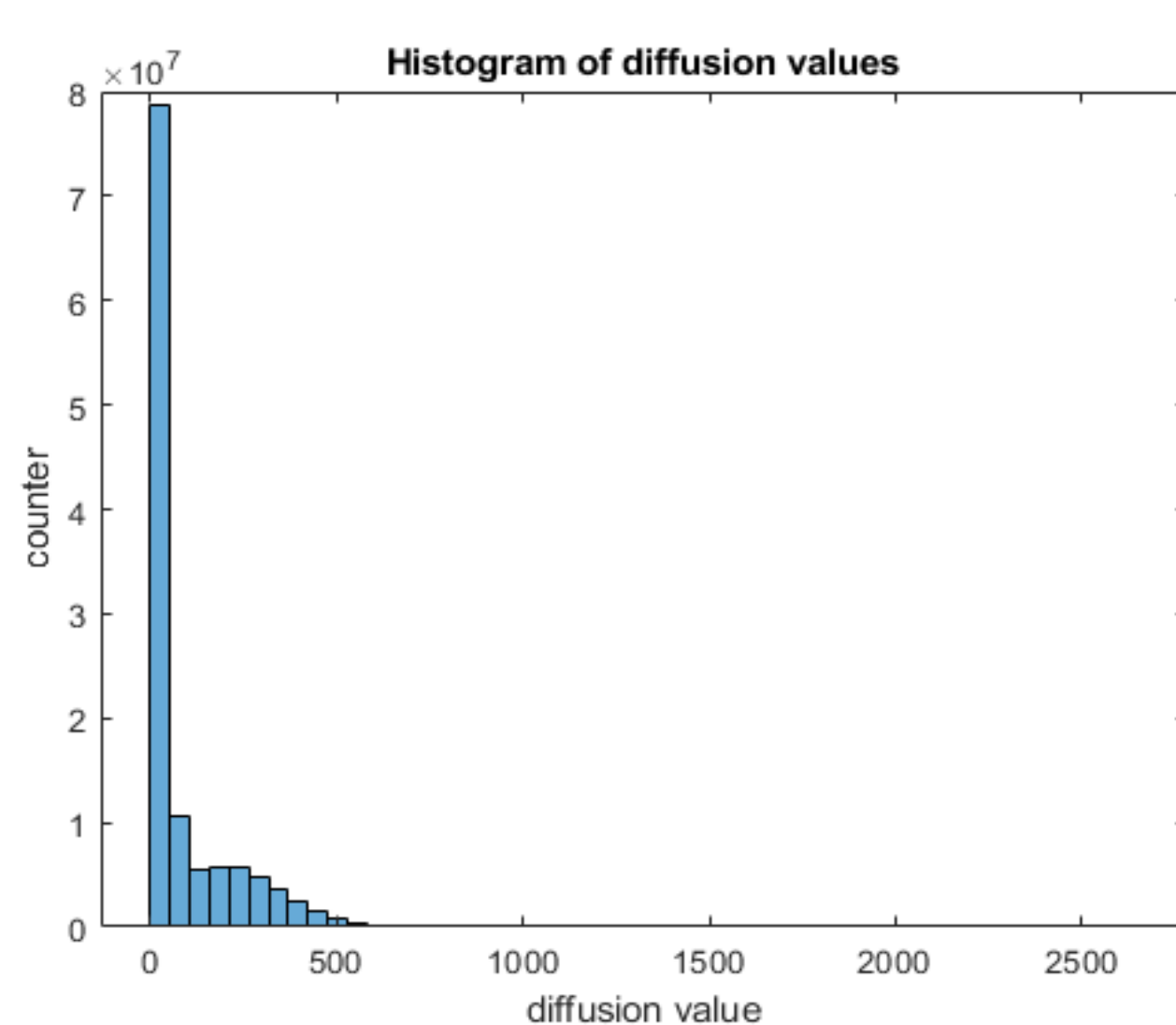
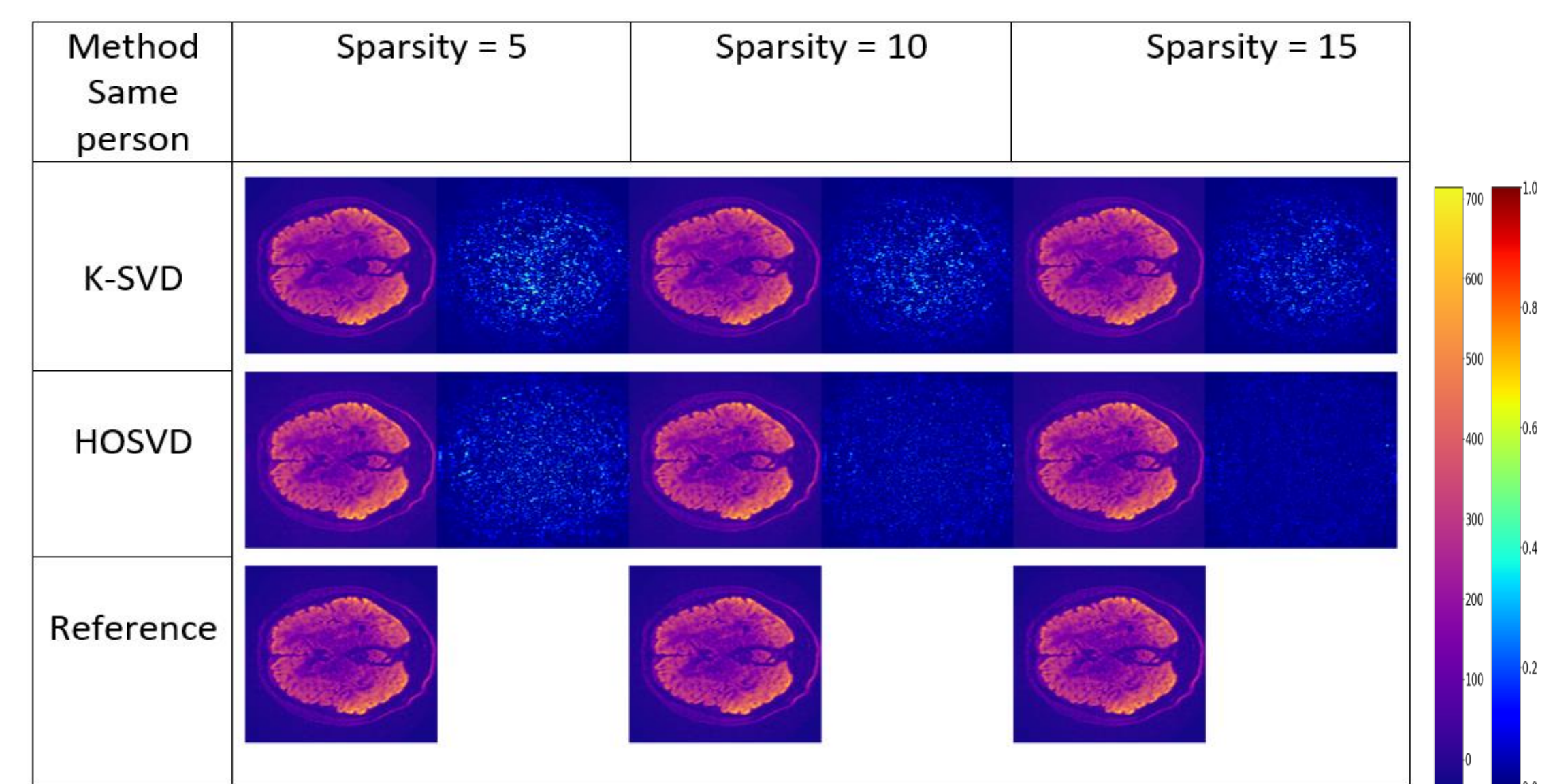
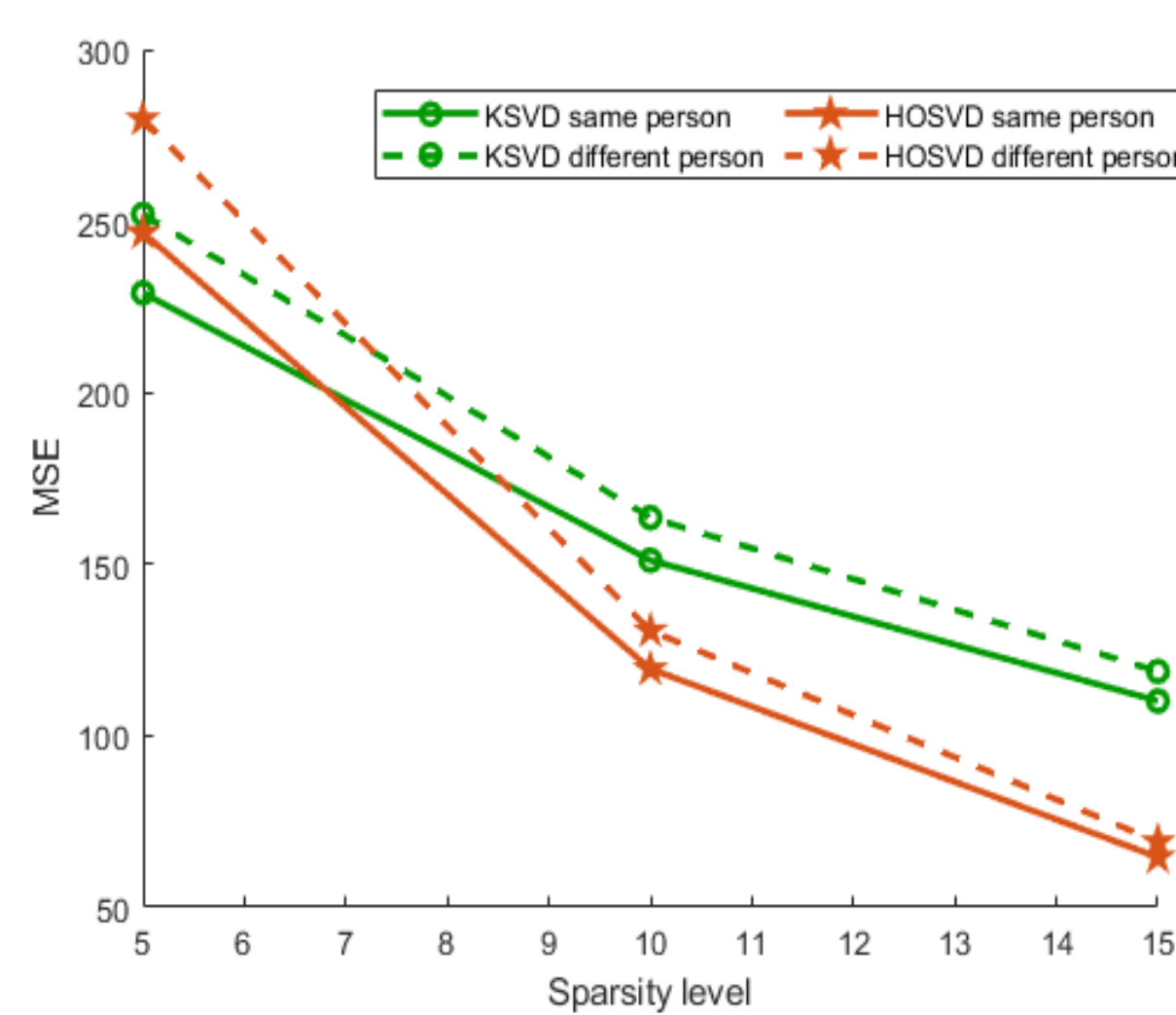
Sparse representation - Lego example



How to find the dictionary D ? — K-SVD



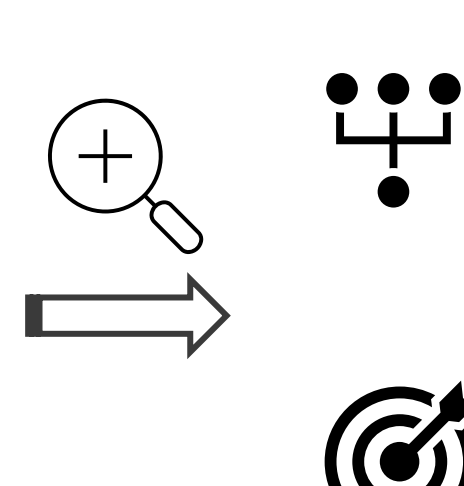
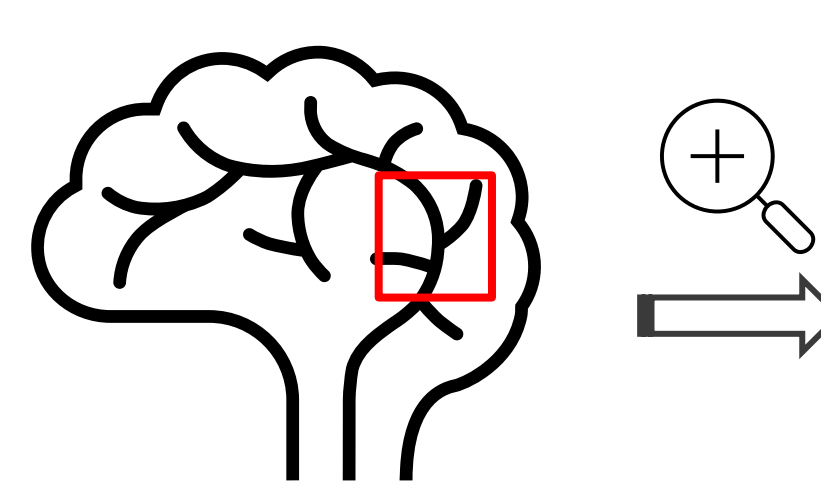
Results comparison



(a) Statistical differences

(b) Visual differences

Future Work



Multi-dimensional Sparse representation for features extraction

Model-specific error measurements