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## Irène Kaltenmark - Curves and surfaces. Partial matching in the space of varifolds.

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The matching of analogous shapes is a central problem in computational anatomy. However, inter-individual variability, pathological anomalies or acquisition methods sometimes challenge the assumption of global homology between shapes.

In this talk, I will present an asymmetric data attachment term characterizing the inclusion of one shape in another. This term is based on projection on the nearest neighbor with respect to the metrics of varifold spaces.

Varifolds are representations of geometric objects, including curves and surfaces. Their specificity is to take into account the tangent spaces of these objects and to be robust to the choice of parametrization.

This new data attachment term extends the scope of application of the pre-existing methods of matching by large diffeomorphic deformations (LDDMM). The partial registration is indeed induced by a diffeomorphic deformation of the source shape. The anatomical (topological) characteristics of this shape are thus preserved. This is a joint work with Pierre-Louis Antonsanti and Joan Glaunès.