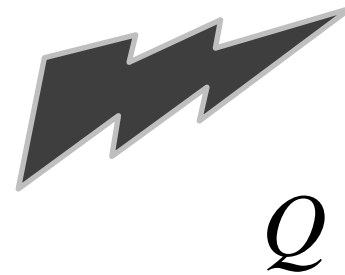
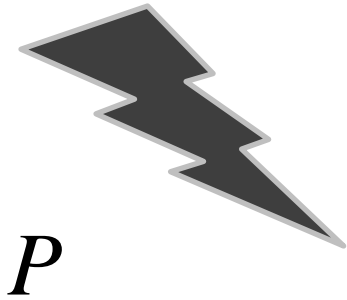


Geometric Registration for Deformable Shapes

1.3 4D Kinematic Surfaces

Rigid Transformation

(R, t) ?



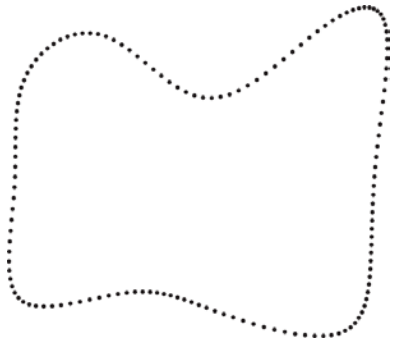
$$p \rightarrow Rp + t$$

$$R^T R = I$$

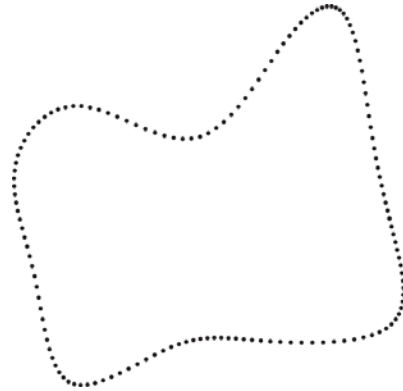
Scanning (Moving) Objects



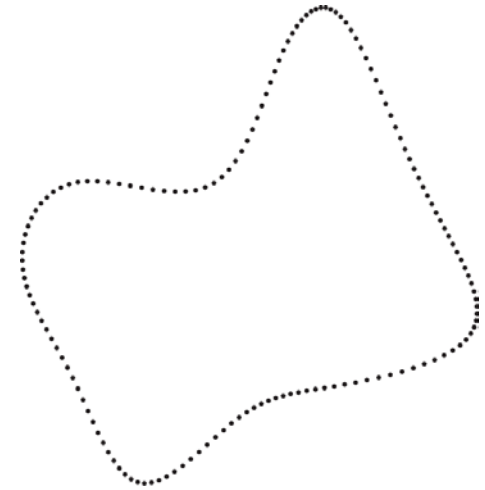
Time Ordered Scans



t^j



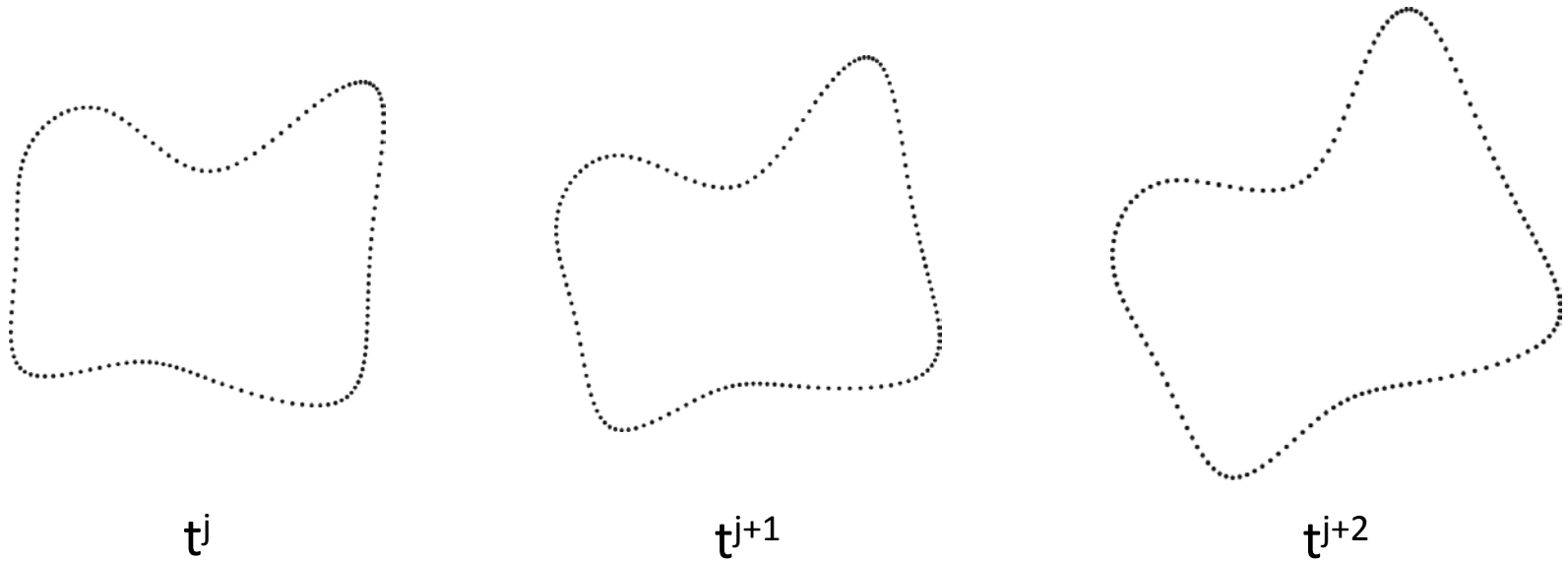
t^{j+1}



t^{j+2}

$$\tilde{P}^j \equiv \{\tilde{\mathbf{p}}_i^j\} := \{(\mathbf{p}_i^j, t^j), \mathbf{p}_i^j \in \mathbb{R}^d, t^j \in \mathbb{R}\}$$

Time Ordered Scans

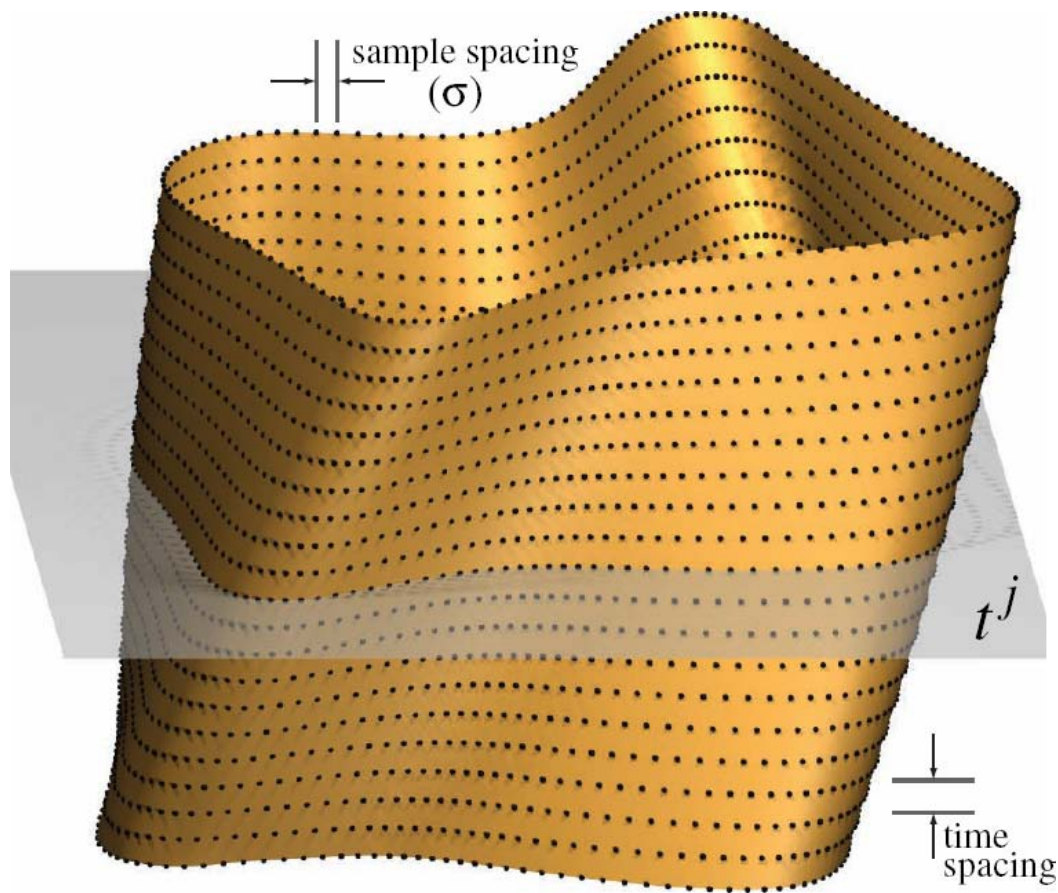
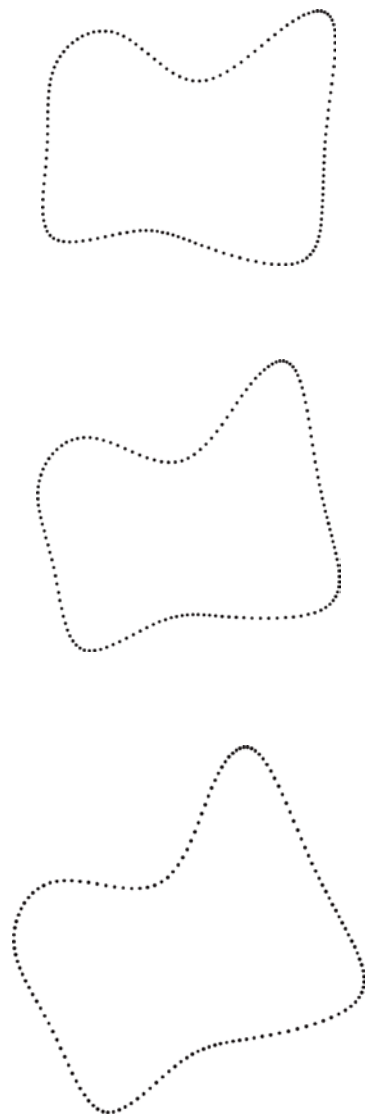


$(R, t)^j$

$(R, t)^{j+1}$

$$\tilde{P}^j \equiv \{\tilde{\mathbf{p}}_i^j\} := \{(\mathbf{p}_i^j, t^j), \mathbf{p}_i^j \in \mathbb{R}^d, t^j \in \mathbb{R}\}$$

Space-time Surface



Kinematic Surfaces

Space-time registration → kinematic surface estimation

