

A novel method is presented for matching of curves across different viewpoints. The fundamental perspective invariants for curves in the real projective space are the volume cross-ratios. The signature manifold of joint invariants completely prescribes the projective curve. Furthermore, sub-manifolds given by the projection of the signature manifold also represent the curve uniquely. Sections of the sub-manifolds that admit large enough variation of cross ratios are found to be sufficient, statistically, for matching of curves. Such sectional signatures allow fast computation and matching of features while keeping the descriptors compact. In distributed video networks, the projective invariant description of a rigid body does not change over time thereby reducing the incremental frame-to-frame information. Experimental results with simulated as well as real data are provided.