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Theresa C Anderson* (tcanderson2@wisc.edu), 480 Lincoln Dr., Madison, WI 53706. *The Light Cone and the Conformal Sphere: Differential Invariants and their Relations.*

Here we employ the normalization technique of Fels and Olver to construct group-based moving frames for star-shaped curves in the light cone and the conformal 2-sphere, and we use the moving frame to find the differential invariants. Surprisingly, curves in these different geometries are not only connected via a projectivization map, but, with the appropriate choices of normalization constants, the invariants and invariant evolutions are related as well. We will prove that when we reparameterize star-shaped curves in the light cone with respect to centro-arc-length, the differential invariants are in a one-to-one correspondence with the conformal differential invariants under the projectivization. (Received February 08, 2010)