## Rigged structure : A bridge between Null and Riemannian Geometries

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Abstract. Null geometry is the study of smooth manifolds furnished with degenerate (0, 2)-metric tensor. For any semi-Riemannian manifold there is a natural existence of null subspaces. Null curves and null hypersurfaces are particularly scrutinized because of their great importance in physics, especially in the study of black holes horizons. The degeneracy of the metric is the main drawback in their study, and it is usually overcome making auxilliary choices of distribution and local null section. A new approach is emerging in recent years that improves on the old one I just mentioned : the rigged structure. What makes this approach particularly efficient is that it makes it possible to induce a Riemannian structure on the null hypersurface and establishes a bridge between the null geometry and Riemannian one. We show in this talk how to use this interrelation to explore various aspects of null geometry such as completeness, compacity issues, symmetries and causality of ambient spacetimes.