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## High-precision cosmology and inhomogeneities: exact results in the geodesic light-cone gauge

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The remarkable properties of the recently proposed geodesic light-cone (GLC) gauge allow to get some new interesting results to face the problem of inhomogeneities and their backreaction. Indeed, GLC simply consists of gauge fixing the metric tensor on the past light-cone of the observer. Thanks to this choice, several interesting physical observables, related to photons, can be evaluated within this framework. In this talk, we will present an overview on these recent results: in particular, we will show how the geodesic deviation equation can be exactly solved, giving an exact expression for the so called Jacobi map. Furthermore, its link with cosmological distances and weak gravitational lensing will be discussed.

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