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A goal of the mathematical studies of gravitational lensing is to establish a relation between observables using geometric and topological information of the optical metric. In the work of Gibbons-Werner (2008), such a relation is established between the deflection angle of observation and the Gauss curvature of the optical metric of a static spacetime. In view of the fact that the corresponding optical geometry of static spacetimes is Riemannian, the Gauss-Bonnet theorem was used in a fundamental way. In contrast with static spacetimes, the optical metric for stationary spacetimes is of Randers-Finsler type. In this talk we shall discuss some results on Finsler geometry approach for stationary spacetimes. Joint with Marcus Werner (Kyoto University). (Received September 24, 2018)