The invariant trace field is one of the most used tools in the study of hyperbolic manifolds from the number-theoretical point of view. It is often used to approach questions about commensurability and arithmeticity of manifolds. We will discuss how this number field is related to the intrinsic geometry of a cusped hyperbolic 3-manifold, and to intercusp geodesics in particular. This geometric perspective allows one to compute the invariant trace field of many hyperbolic link complements from their diagrams. This is a joint work with Walter Neumann, based on earlier joint work with Morwen Thistlethwaite. (Received January 15, 2014)