On a global inverse function theorem for homogeneous map and its application

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The purpose of this talk is to explain a global inverse function theorem for homogeneous mappings on R^n, along with the topological fact behind it. The main difficulty lies in the fact that such mappings are not smooth at the origin, making the known global inverse function theorems on R^n not readily applicable. The primary motivation for studying such inverses is their applications to the global invertibility of Hamiltonian flows, and further applications to the global-in-time construction of solutions to hyperbolic equations.