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Covers of reductive groups and functoriality

Abstract:

In the study of the Langlands program one often comes in contact with subgroups of the L-group of a connected reductive group G that have a similar appearance as the L-group of a smaller group H, but often either fail to be isomorphic to the L-group of H, or fail to have a canonical isomorphism with it. We propose a resolution to this problem by constructing certain (non-linear) covers of the topological group H(F) as well as L-groups for these covers. This works for any local field, and follows work of Adams-Vogan for the real numbers. We will present two applications to this construction: A unique characterization of the local Langlands correspondence for supercuspidal parameters (subject to conditions on the base field), and a reinterpretation of the transfer factors in the theory of endoscopy.