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Arithmetic properties of rigid local systems

An irreducible local system is called rigid, if it cannot be deformed to a non-isomorphic local system. According to a conjecture by Simpson, rigid local systems on smooth projective varieties are expected to be of geometric origin, which leads to a swathe of surprising arithmetic and geometric properties for rigid local systems. In this talk I will explain how some of those properties can be established directly. This is joint work with Esnault.