

## Exposé plénier

### 4 **Local systems of geometric origin**

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I will discuss “non-abelian” analogues of the Hodge and Tate conjectures, due to Simpson, Gieseker, Fontaine-Mazur, and others, as well as some evidence for these conjectures obtained in joint work with Aaron Landesman and Yeuk Hay Joshua Lam. These conjectures are an attempt to characterize the local systems on an algebraic variety which “come from algebraic geometry” — I will explain some examples where one can explicitly write down all such local systems.