

## Noncommutative coordinates for maximal symplectic representations.

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**Abstract:** Representations of the fundamental group of an orientable surface of finite type into a Hermitian Lie group  $G$  with maximal Toledo invariant are of particular interest in the Higher Teichmüller theory. These representations were studied by M. Burger, A. Iozzi and A. Wienhard and generalize Fuchsian representations of the fundamental group of a surface into  $\mathrm{PSL}(2, \mathbb{R})$ . Moreover, maximal representations have particularly nice properties, e.g. they are injective with discrete image in  $G$ . In my talk, I introduce the  $X$ -type coordinates on the decorated space of maximal representations of the fundamental group of a punctured surface into  $\mathrm{Sp}(2n, \mathbb{R})$ . These coordinates generalize the Fock-Goncharov coordinates for representations into  $\mathrm{PSL}(2, \mathbb{R})$ . If time permits, I will talk about how we can understand the topology of the decorated space of maximal representations using these coordinates. This is a joint work with D. Alessandrini, O. Guichard and A. Wienhard.