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From character varieties to isoperiodic foliations: a transfer principle

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Schiffer variations are surgery operations that takes an abelian differential on a curve to another one with the same periods. Viewed in the moduli space of abelian differentials of a fixed genus g>=2, they draw a complex algebraic foliation of dimension 2g-3, called the isoperiodic foliation. Its transverse structure is modelled on an open set contained in the group of complex periods, on which the mapping class group acts via the symplectic group. We will see that the (rich) dynamical properties of this latter are also satisfied by the isoperiodic foliation: this phenomenon is what we call the transfer principle. The fact that it holds relies on the connectivity of certain moduli spaces of abelian differentials on curves with prescribed periods.
This is a work in collaboration with Gabriel Calsamiglia and Stefano Francaviglia.

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