

Announcement

## Seminar on Deformation Quantization

**3. 6. 2022 at 2pm CEST**

Seminar in SE 31

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A slice of Teichmüller theory

In this talk, we give a glimpse into one of the numerous approaches to Teichmüller theory, culminating with the Hilbert-Kähler manifold structure of the universal Teichmüller space, as introduced by Teo and Takhtajan. Starting out, we introduce quasiconformal mappings as particular solutions of the Beltrami partial differential equation  $\bar{\partial}f = \mu \cdot \partial f$ . Imposing a cleverly chosen boundary condition, the corresponding set of solutions turns out to be a somewhat – albeit less than one would like – well behaved group. Passing to a quotient group then yields a definition of the universal Teichmüller space  $T(1)$ . Enhancing the quotient topology, we arrive at a complex Banach space atlas. Notably, this atlas may be shrunk to a single chart, the infamous Bers embedding. Finally, one may chop this chart into pieces, each biholomorphic to an immersed Hilbert ball, which induces the Kähler structure by right translation from the tangent space at the group unit. During our voyage, we will meet and promptly skip over various classical results from a diverse range of subfields of analysis.

Invited by Stefan Waldmann