

Auditing Asymptotic Safety

Panel Discussion

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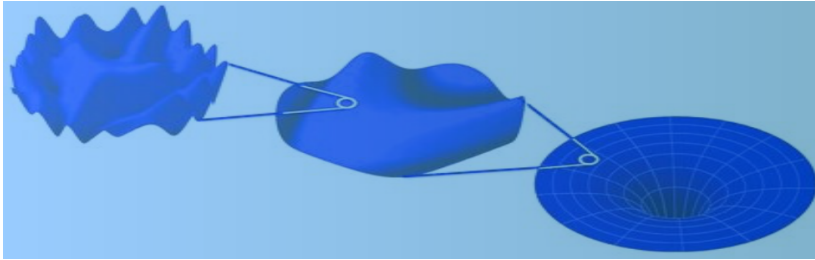
Quantum Space-Time and the Renormalization group 2023
Sant'Elmo, Sardinia
October 5th 2023



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What is quantum space-time?



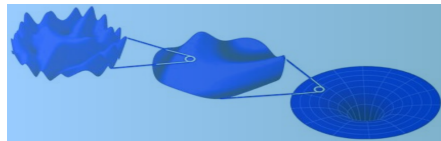
Common goal: **unravel** this **intriguing picture**

What are the **properties of (quantum) space-time** at the **Planck scale**?

Interpretation of scale? Talks by Bonanno, Percacci

Foundational questions for Quantum Gravity

- Gravitational **observables** (notoriously difficult)
 - **Relational** (quantum) observables Talk by Ferrero
 - Impact on physical systems? Talks by Reichert, Pawłowski, Wetterich, Held
- **Lorentzian signature and causal structure** Talk by Reichert, Rejzner, Niedermayer
 - Tools for calculations with **complex amplitudes** ($e^{iS_{EH}}$)?
- **Gravity-Matter systems** Talks by Schiffer, Lino dos Santos
 - Intriguing interplay of matter and gravity
- **Equivalent formulations of GR (on-shell)?** Talk by Yamada
 - Area-metric theories + constraints [Borissova, Dittrich '22]
- Comparison **across approaches** Talk by Schiffer



Foundational issues tackled by
Asymptotic Safety community!