

## NEW PERSPECTIVES IN CONFORMAL FIELD THEORY AND GRAVITY

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# Holographic Schwinger-Keldysh Contours and Effective Actions for Fluids

*Wednesday 27 September 2023 17:12 (18 minutes)*

In this talk, I will discuss the real-time dynamics of gravitons and photon fluctuations around the AdS-Reissner-Nordstrom black hole and argue that the dynamics of these modes are captured by a set of designer scalars in the background geometry. I will show how it is possible to isolate the phonon mode, momentum, and charge diffusion modes, and identify the combination of currents that corresponds to each of them. Using these results I will obtain the real-time Gaussian effective action, which includes both the retarded response and the associated stochastic. Finally, I will discuss possible extensions beyond linear response.

## Summary

**Primary author:** VIRRUETA, Julio (Friedrich-Schiller-Universität)

**Presenter:** VIRRUETA, Julio (Friedrich-Schiller-Universität)

**Session Classification:** Parallel Session Wednesday: Strings / Mathematics Physics IV

**Track Classification:** Strings & Mathematical Physics