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Type: **Talk in a parallel session**

## Gravitational lensing by wormholes

*Monday, 8 July 2024 15:25 (25 minutes)*

In this talk I consider the propagation of light rays, either in vacuum or in a non-magnetised pressure-less plasma, in axially symmetric and stationary spacetimes that describe wormholes. Among other things, I discuss the necessary and sufficient conditions for separability of the Hamilton-Jacobi equation (i.e., for the existence of a Carter constant) which allows complete integrability. For the case that this condition is satisfied, I demonstrate how the photon region and the shadow can be analytically determined. I also discuss the necessary and sufficient condition for light rays to stay in the equatorial plane and the bending angle for such light rays.

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**Session Classification:** Gravitational lensing, shadows and photon rings

**Track Classification:** Experimental Gravitation (EG): Gravitational lensing, shadows and photon rings