

Abstract for GR-TR Conference on Statistical Mechanics and Dynamical Systems

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Luneburg lens waveguide networks

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We investigate certain configurations of Luneburg lenses that form light propagating and guiding networks. We study single Luneburg lens dynamics and apply the single lens ray tracing solution to various arrangements of multiple lenses. The wave propagating features of the Luneburg lens networks are also verified through direct numerical solutions of Maxwells equations. We find that Luneburg lenses may form efficient waveguides for light propagation and guiding. The additional presence of nonlinearity improves the focusing characteristics of the networks.