



LIGHT RING ORBITS AND THEIR TOPOLOGICAL CHARGES

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Light Rings are a special class of bound null orbits with relevance to the astrophysical observation of black holes and ultra-compact objects. In this mini-course we shall discuss a series of novel existence theorems of Light Rings around these objects. These results are based on a general technique that assigns a topological charge to Light Rings. More recent applications of these techniques in other contexts are also discussed.