

FILAMENTARY AND PLANAR STRUCTURES  
IN GRAVITATION AND OBSERVABLE EFFECTS

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S u m m a r y

A waveguiding effect is considered in respect to the large-scale structure of the Universe. In particular, we consider filamentary and planar large-scale structures as possible refraction channels for electromagnetic radiation coming from cosmological structures. Thanks to a numerical simulation by this hypothesis and the analytical model, it is possible to explain the quasar luminosity distribution and, in particular, the presence of “twin” or “brother” objects. The method and details of the simulation are given.