

REFLECTOR PROBLEM AND THE INVERSE SQUARE LAW

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Suppose $\Omega \subseteq S^2$, f a positive measurable function on Ω and η a radon measure defined on a compact set D contained in \mathbb{R}^2 . Radiation emanates from the origin O with radiant intensity flux $f(x)$ in the direction $x \in \Omega$. In this talk we will show the construction of a surface $\sigma = \{\rho(x)x\}$ such that the radiation are reflected off by σ into the set D and such that the radiation received on a patch E of D is at least $\eta(E)$. The solution σ of this geometric optic problem is a weak solution of a Monge Ampere type equation that has been longly studied and has many application in differential geometry and in physics.