THE REFLECTOR PROBLEM AND THE INVERSE-SQUARE LAW

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Abstract.[*] We introduce a model to design reflectors that take into account the inverse-square law for radiation, i.e. it considers how far the reflector is from the source. The radiant intensity at the source and the irradiance distribution at the target are given. We prove the existence of solutions in the near field case, when the input and output energies are prescribed. A uniqueness property will also be shown.The reflectors constructed are weak solutions of a Monge-Ampère type partial differential equation .

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