

Estimation of the Spatial Distribution of High Impulsed Heat Flux Stimulations Through Infrared Thermography

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The aim of this paper is to present an inverse technique for the spatial distribution estimation of a high energy pulse. A theoretical model obtained by using integral transforms is first presented. It is then used for the estimation of the heat flux distribution. As this problem is ill-conditioned, different techniques have been used for its identification, such as the estimation of heat flux spatial frequencies (harmonics by harmonics) or the estimation of the spatial frequencies in the Least Squares sense. These methods have been applied in the case of two different facilities, "TIC / TAC" in CEA-Cesta and the "LUMIX" bench in LEMTA, before being used for the high power electrons beam generator CESAR located in CEA-CESTA.

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