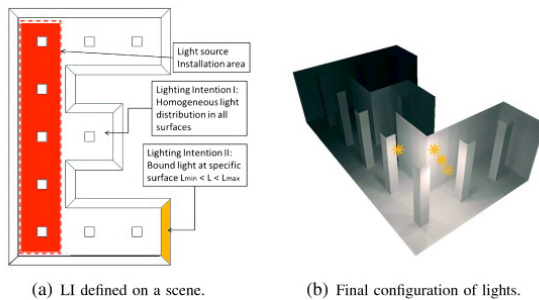


Efficient inverse lighting: A statistical approach

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Given a scene to illuminate satisfying a specific set of lighting intentions,

the inverse lighting techniques allows to obtain the unknown light sources parameters, such as light position or flux emission.

This paper introduces a new inverse lighting approach that uses the radiosity mean and variance to define lighting intentions of a scene.

It is shown that these statistical parameters can be obtained without the previous calculation of the radiosity of the scene.

Avoiding the explicit computation of the illumination of the scene

results

in a drastic reduction of the time required for the inverse process.

This approach also provides a methodology that transforms a current set of lighting intentions into a single lighting intention with statistical parameters.

The tests show that the processing time for solving the inverse problem can be reduced to a few seconds in most cases, improving previous work.