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Local absorption for plasmon-induced hot carrier generation NICHOLAS HUNTOON, ALEJANDRO MANJAVACAS, University of New Mexico — Plasmon-induced hot carrier generation is attracting increasing attention due to its potential impact in photocatalysis and solar energy harvesting applications. Despite the great research effort that has been put into the experimental and theoretical characterization of this process it is usual to correlate the carrier production with the total absorption of the nanostructure calculated from the far-field response of the system. Here, by rigorously solving Maxwell's equations, we calculate the local absorption for metallic nanostructures with different morphologies and made of a variety of plasmonic materials and show that this quantity can greatly differ from the far-field absorption. The results of this work contribute to the basic understanding of plasmon-induced hot carrier generation and provide insight for the optimization of this process.

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