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Dust Particle Contamination Detection Mechanisms JAMES CREEL, JORGE CARMONA REYES, LORIN MATTHEWS, TRUELL HYDE, CASPER - Baylor University — The existence of dust within magnetic confinement fusion (MCF) reactors has always been an issue; recently it has garnered new attention as a mechanism for degraded confinement performance and increased safety risks. These consequences arise in part due to the fact that such dust can erode and adhere to chamber walls, become chemically toxic or radioactive, and promote arcing between the plasma and the chamber. Unfortunately, due to the operating regimes of the bulk plasma (luminosity, temperature, etc.), methods for detecting such dust are currently limited. This paper will discuss a dust tracking system currently employed within a light gas gun (LGG), exploring the combination as one possible mechanism for developing new dust detection diagnostics.

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