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Investigating voltage recovery after breakdown supercritical nitrogen[1] ARAM MARKOSYAN, Centrum Wiskunde and Informatica, Amsterdam, JIN ZHANG, BERT VAN HEESCH, Eindhoven University of Technology, UTE EBERT, Centrum Wiskunde and Informatica, Amsterdam — We simulate the thermal shock and induced pressure waves caused by electrical breakdown of supercritical nitrogen. The goal is to investigate the temperature evolution after breakdown, thus predicting the recovery rate of a plasma switch based on supercritical liquids. The system of fluid equations is used to obtain the spatial and temporal evolution of liquid density, pressure, velocity and energy. We compare simulation and experimental results.

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