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**Multi-Objective data analysis using Bayesian Inference for MagLIF experiments** PATRICK KNAPP, MICHAEL GLINKSY, Sandia National Laboratories, MATTHEW EVANS, Universty of Rochester, MATTH GOM, STEPHANIE HAN, ERIC HARDING, STEVE SLUTZ, KELLY HAHN, ADAM HARVEY-THOMPSON, MATTHIAS GEISSEL, DAVID AMPLEFORD, CHRISTOPHER JENNINGS, PAUL SCHMIT, IAN SMITH, JENS SCHWARZ, KYLE PETERSON, BRENT JONES, GREGORY ROCHAU, DANIEL SINARS, Sandia National Laboratories — The MagLIF concept [1] has recently demonstrated Gbar pressures and confinement of charged fusion products at stagnation [2,3]. We present a new analysis methodology that allows for integration of multiple diagnostics including nuclear, x-ray imaging, and x-ray power to determine the temperature, pressure, liner areal density, and mix fraction. A simplified hot-spot model is used with a Bayesian inference network to determine the most probable model parameters that describe the observations while simultaneously revealing the principal uncertainties in the analysis. [1] S.A. Slutz, et al., Phys. Plasmas **17**, 056303 (2010), [2] M.R. Gomez et al., Phys. Rev. Lett.113, 155003 (2014), [3] P.F. Schmit et al., Phys. Rev. Lett. 113, 155004 (2014)
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