

Abstract Submitted  
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**KEEN Waves, Conformal Invariance and Connections to 2D Euler Turbulence Theory**<sup>1</sup> BEDROS AFEYAN, MATHIEU CHARBONNEAU-LEFORT, Polymath Research Inc. — KEEN Waves are a manifestation of nonstationary, self-organized, nonlinear, kinetic states shown to be prevalent in coherently driven plasmas [1]. We will examine statistical mechanical and conformal invariance in critical phenomena based arguments that try to explain the existence and salient features of such states as well as indicating mechanisms by which turbulence and disorder are beaten in order to generate them. The connection with 2D Euler turbulence [2], multifractal characterizations of critical phase transitions and Schramm-Loewner evolutions will be given.

[1] B. Afeyan, et al., Kinetic Electrostatic Electron Nonlinear (KEEN) Waves and their interactions driven by the ponderomotive force of crossing laser beams, Proc. IFSA, (Inertial Fusion Sciences and Applications 2003, Monterey, CA), B. Hammel, D. Meyerhofer, J. Meyer-ter-Vehn and H. Azechi, editors, 213, American Nuclear Society, 2004.

[2] Bernard, et al., Nature Phys. 2, 124 (2006) and references therein.

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