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Higher Order Phase Transitions and Tachyon Condensation PRADEEP KUMAR, University of Florida, AVADH SAXENA, Los Alamos National Lab, AVINASH KHARE, Institute of Physics, India — We discuss the similarities (and the differences) between the models which describe a p'th order phase transition (in the Ehrenfest sense) and that which describes tachyon condensation in string theory. Using the appropriate free energy for the two systems, we obtain exact domain wall solutions and study their stability for some cases. Extrapolating this analogy, we suggest that the tachyon condensation is analogous to the celebrated Kosterlitz-Thouless transition. It has been suggested that the superconducting transition in BKBO may be of order four. Similarly, the Ising ferromagnet on a Cayley tree and a model by Gross and Witten in particle physics are believed to be order three.

Avadh Saxena
Los Alamos National Lab

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