## Abstract Submitted for the MAR12 Meeting of The American Physical Society

Extended phase diagram of ASEP with two types of particles<sup>1</sup> AYSE YESIL, M. CEMAL YALABIK, Bilkent University — First introduced by Evans et al. (PR E, 74 208, (1995)), the Asymmetric Simple Exclusion Process (ASEP) has become an important model in the field. The model is simple in structure, however it offers an oppurtunity to study some of the basic characteristics of nonequilibrium systems. We use mean field, Monte Carlo, and RG methods to present a detailed phase diagram of the ASEP with two types of particles moving in opposite directions. The nature of the spontaneous symmetry broken phases will also be discussed.

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Date submitted: 14 Nov 2011 Electronic form version 1.4