

### 3. Megumi KITAGAWA (Ochanomizu University)

Multi-state asymmetric simple exclusion processes

#### Abstract

An asymmetric simple exclusion process (ASEP) is a probabilistic process which describes one-dimensional random walks. A multi-state extension of ASEP is developed using the higher-dimensional representation of the  $U_q(\mathfrak{sl}_2)$  algebra by Matsui. In this talk we focus on the three-state ASEP to construct its update operators. We also consider the case where  $q$  is negative.