

## [Talk 16] Probability for a tagged particle's position in the $q$ -deformed zero range process

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In this talk, we introduce a way of finding the probability distribution of each particle's position in the  $q$ -deformed zero range process with a finite number of particles when the process starts from an arbitrary initial configuration. By using this result, we find the probability distribution of each particle's position in the infinite system when its initial configuration is such that all particles are at the same site. This formula is represented by the contour integral of the series expansion of a Fredholm determinant. Finally, the model in the talk can be mapped to a variant of the  $q$ -TASEP and we discuss how our results can be used to study the asymptotics, comparing with recent results in other models. (*This is a joint work with Dong Wang (National University of Singapore).*)