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Interactive dynamics controlling symmetry breaking in bidirectional transport systems with narrow entrances

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Highlights

- A two-channel bidirectional TASEP model with narrow entrances, including the collective motion of interacting particles is studied.
- The phase diagrams are analyzed theoretically within the mean-field approximation and substantiated with Monte Carlo simulations.
- The control of interactions on the symmetry breaking structure is examined.
- The phase properties with strong size dependency have been explored based on simulations findings.
- The impact of correlation strength on system behavior has been analyzed.