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Predictions from the Mitaka Model and GALFORM to the Nature of High-z Lyman-α Emitters

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Lyman-α Emitters (LAEs) have been identified as a way of isolating high-z galaxies by using narrow-band filters and one of the main targets of existing and proposed telescopes to probe the formation history of galaxies at high-z. However, their physical nature is still unclear because of their faint continuum emission. In order to tackle this issue, we have developed theoretical models for high-z LAEs based on two distinct semi-analytic model for galaxy formation, that is, *the Mitaka model* (Kobayashi et al. 2007, 2010) and *GALFORM* (Le Delliou et al. 2006; Orsi et al. 2008). Examining the similarities and differences of what types of model galaxies are selected as LAEs between two different models, we can deepen our understanding of LAEs' physical nature and early stages of galaxy formation significantly.

It has already been found that these models provide similar observational statistical quantities (e.g., Lyman-α and rest-frame UV luminosity functions) and nicely reproduce various observed data of LAEs at $z = 3 - 7$. We plan to present the result of comparison of model predictions with observed data and the predicted distribution of physical quantities such as stellar mass and dust extinction.