

## Critical Curves of a Triple Lens with Fixed Mass Ratios

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**Abstract:** Correct interpretation of gravitational microlensing light curves requires an understanding of the geometry of the underlying lens caustic and critical curve. In the case of three-point-mass microlensing, such as the event OGLE-2006-BLG-109, we still do not have a full grasp of the range of possible caustics and critical curves. In our exploration of three-point-mass lensing we first concentrate on the topology of the critical curve, i.e., the number of its loops and their relative position. The general three-point-mass lens is described by five parameters: two mass ratios and three position parameters. Following our analysis of special two-parameter configurations, we proceed here to three-parameter configurations. We use a new numerical method for finding the conditions for topology changes of the critical curve to map the full 3D parameter space. As an example, we demonstrate the analysis of a lens with fixed mass ratios in an arbitrary configuration, which includes the full classification of lensing by three equal masses.