## Involutes of fronts in the Euclidean 2-sphere

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## Abstract

In this paper, we investigate the properties of involutes of singular spherical curves. In general, the involute of a regular spherical curve has singularities, hence we consider Legendre curves in the unit spherical bundle. By using the moving frame and the curvature of fronts, we define involutes of fronts in the Euclidean 2-sphere. We give some properties of involutes at singular points. Moreover, we consider the relationships between evolutes and involutes of fronts without inflection points and give a kind of four vertices theorem. Furthermore, by the definition of pedal curves, we define contrapedal curves of fronts in the Euclidean 2-sphere and give some relationships between them.

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