

## Abstract

In this talk, we investigate the existence of center expansion concerning curve expanding flow in the plane. First under a mild assumption on the speed function, we will show that there exists a *center of expansion* when we expand a convex embedded closed curve  $\gamma_0 \subset \mathbb{R}^2$  to infinity. If the center exists, we do not know in general whether it is enclosed by the initial curve  $\gamma_0$  or lies outside  $\gamma_0$ . Using the *Aleksandrov reflection* result of Chow-Gulliver, we shall show that this center of expansion actually lies on certain convex plane region *interior to*  $\gamma_0$ .

Finally, we observe the relation between the center of expansion and the isoperimetric difference  $L^2 - 4\pi A$ . According to this observation, we give an explicit example to demonstration that if the assumption of the speed function is not satisfied, then the center of expansion may not exist in general.