Fully nonlinear curvature flows with general introductions

Ki-Ahm Lee*

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Abstract: In this talk, we are going to discuss nonlinear curvature flows with applications. Curvature flow is the deformations of surfaces in the inward normal direction with a speed proportional to a curvature, for example, mean curvature and gauss curvature. We will focus on the gauss curvature flows and scalar curvature flows. One of the main question is the regularity of the solutions depending on the geometric shape of the surface. Different geometric condition will change the class of nonlinear equation even though it follows the same kind of curvature flow and it will require different approach to get the optimal regularity. The other interesting question is the geometric shape of the solution as it blows up. We will discuss a couple of different methods to achieve the results.

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*Seoul National University