



<b>Thesis Title</b>	Application of Sinc-Galerkin Method to Solve Differential Equations on Fan-Shaped Domains
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### ABSTRACT

The objective of this study algorithm is to use the Sinc-Galerkin method to coordinate fan-shaped domain. It is the best way to solve the different equations. Also, it could apply to use with Domain Decomposition Method for solving Polygonal Shapes Domain Problem in major of Science and Engineer such as heat transfer equations and fluid equations.

We present an efficient algorithm based on the Sinc-Galerkin approximation for solving the Poisson equation on a fan-shaped domain. The key to the efficiency of our algorithm is to map the domain to a semi-infinite domain by using the exponential formula. The numerical result shows that the accuracy of the Sinc-Galerkin method is exponential convergence rate, even in the presence of singularities. The numerical results showed that using the Sinc-Galerkin method give an accurate result in every interior angle.