

## **Two- and Three-Dimensional Validation of Icing Model**

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Ice accretion is a phenomenon where super-cooled water droplets impinge and accrete on a body. On a jet engine, ice accretion leads to the severe performance degradation. There have been several accidents due to ice accretion. The research on ice accretion phenomena has been conducted since early 1990's. The first icing simulation model was developed by Messinger in 1953. This model has been widely used in simulating ice accretion phenomena. Recently, Extended Messinger model was developed by Ozgen and Canibek in 2009. This model is more sensitive than Original Messinger model in suitably estimating the runback mass. In this study, we conducted the validation of these icing models in two- and three-dimensional field. Finally, we indicated Extended Messinger model is more superior to Original Messinger model in simulating glaze icing. In addition, we investigated the roughness model and the runback model.

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