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Temperature Distribution Measurement of The Wing Surface under Icing Conditions HIROSHI ISOKAWA, TAKESHI MIYAZAKI, Univ of Electro-Comm (UEC), SHIGEO KIMURA, Kanagawa Institute of Technology, HIROTAKA SAKAUE, Univ of Notre Dame, KATSUAKI MORITA, Japan Aerospace Exploration Agency, JAPAN AEROSPACE EXPLORATION AGENCY COLLABORATION, UNIV OF NOTRE DAME COLLABORATION, KANAGAWA INSTITUTE OF TECHNOLOGY COLLABORATION, UNIV OF ELECTRO-COMM (UEC) TEAM — De- or anti-icing system of an aircraft is necessary for a safe flight operation. Icing is a phenomenon which is caused by a collision of supercooled water frozen to an object. For the in-flight icing, it may cause a change in the wing cross section that causes stall, and in the worst case, the aircraft would fall. Therefore it is important to know the surface temperature of the wing for de- or anti-icing system. In aerospace field, temperature-sensitive paint (TSP) has been widely used for obtaining the surface temperature distribution on a testing article. The luminescent image from the TSP can be related to the temperature distribution. (TSP measurement system) In icing wind tunnel, we measured the surface temperature distribution of the wing model using the TSP measurement system. The effect of icing conditions on the TSP measurement system is discussed.

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