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Measurement of flow inside a vacuum cleaner head RYOTARO IGUCHI, HISATAKA BAN, JUN SAKAKIBARA, Department of Mechanical Engineering, Meiji University — Vacuum cleaner head with rotating brushes is widely used as a home appliance. Although it efficiently collects dusts from the floor, flow field of the air and motion of the dust inside the head have not been fully investigated. In this study, we performed 3D-PIV (particle tracking velocimetry) measurement of velocity field inside the head. Water was used as working fluid, which allows a use of fluorescent particle to reduce unwanted reflection from the brushes and inner surface of the head. Mean velocity field and turbulence statistics in the head with and without the brush will be presented.

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