

Abstract Submitted
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PIV measurement of flow around an irregularly rotating disk with bluff bodies¹ SUNGHYUK IM, YOUNG JIN JEON, HYUNG JIN SUNG, KAIST — Flow structure interaction between a rotating disk with bluff bodies and surrounding flow has been evaluated by using a tomographic PIV. To examine the dynamics of disks and the fluid flow simultaneously, fluorescence tracer particles and long pass filters were used. Particles and a marked surface pattern were separated by an image processing. The geometries of the bluff bodies and the disk were then obtained by analyzing the marked pattern. Subsequently, a particle volume was reconstructed by MLOS-SMART. The particle displacement was then calculated by the PIV algorithm from the reconstructed particle volume. Rotating disk dynamics and fluid flow were discussed with variety of bluff body shapes and arrangements. Furthermore, the influence of bluff bodies on the flow field was also considered.

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Sunghyuk Im
KAIST

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