عنوان مقاله:

Experimental Investigation on Supercavitating Flow over Parabolic Cavitators

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خلاصه مقاله:

In this paper experimental study was carried out to investigate supercavitation around parabolic cavitators. Various types of cavitators, such as disk, cone, and parabolic, were designed and manufactured. Also, the shape of the cavities formed behind these bodies were considered and compared. Dimensionless parameters such as dimensionless length and the diameter of the cavity as well as the dimensionless required air flow on the cavitators were obtained. The results showed that parabolic cavitators have an optimum design in comparison with the disk and cone cavitators due to their insignificant capability to reduce the drag force, yet the cavity's length has a moderate size. It was also observed that this type of cavitator is capable of forming a cavity with a dimensionless length up to L/d= ۳۳ and a dimensionless width up to D/d= ۳.۶. Moreover, parabolic cavitators require the highest amount of air injected in comparison with the cone and disk types; therefore, they operate in lower cavitation numbers. Since no other experimental data has been reported so far, this work reports the experimental characteristic behavior of .parabolic cavitators

کلمات کلیدی:

Parabolic cavitator, Supercavitation, Cavitation, Drag reduction