

## عنوان مقاله:

Study on Cavitation Characteristics of Rotating-Sleeve Flow Distribution System

## محل انتشار:

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## خلاصه مقاله:

As Rotating-sleeve Flow Distribution System (RFDS) running, the cavitation of the hydraulic pump may lead to the decreased volume efficiency, increment of vibration and noise, then affecting the operation of system. To deeply analyze the cavitation characteristics of RFDS, the Singhal cavitation model of RFDS was established, meanwhile corresponding experiments were carried out. Cavitation characteristics of RFDS were investigated under various revolving speed, inlet pressure and CAM groove profile. The results demonstrate that the variation trend of experimental volumetric efficiency is the same as that of simulation results. The maximum error is ۲% and ۳.۲% at different rotating speeds and different inlet pressures respectively. Maximum gas volume fraction and cavitation time ratio increase monotonically as the rotating speed increases, and volumetric efficiency increases first and then decreases with the increase of rotating speed. Volumetric efficiency reaches up to ۹۲.۱۳% under the rotating speed of ۵۰۰۲/min. The increased inlet pressure can slow down the cavitation of RFDS and improve volumetric efficiency. Linear .profile exhibits the best cavitation characteristic under both different rotating speed and inlet pressure

## کلمات کلیدی:

Hydraulic pump rotating, sleeve, Cavitation experiment, Fluid domain simulation

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1361867>



