

## KSR-III 로켓의 추진기관에 의한 음향 하중 예측

박순홍<sup>†</sup> (한국항공우주연구원) · 전영두<sup>\*</sup> (한국항공우주연구원)

### Prediction of Acoustic Loads Generated by KSR-III Propulsion System

Soon-Hong Park and Young-Doo Chun

**Key Words** : 로켓(Rocket), 음향 하중(acoustic loads), 예측(Prediction).

**Abstract** : Rocket propulsion systems generate very high level noise (acoustic loads), which is due to supersonic jet of rocket propulsion system. In practice, the sound power level of rocket propulsion systems is over 180 dB. This high level noise excites rocket structures and payloads, so that it causes the structural failure and electronic malfunctioning of payloads. Prediction method of acoustic loads of rocket enables us to determine the safety of payloads. A popular prediction method is based on NASA SP-8072. This method can be used to predict the acoustic loads of KSR-III rocket. However, the predicted acoustic loads are dependent not only on the supersonic jet but also on the shape of flame deflector and neighboring environment. The method needs some modification for better prediction. This paper deals with the modified prediction method. The test data of KSR-III rocket is used to modify the prediction method.

## 로타리 압축기 저주파 특성에 관한 연구

권병하(캐리어(주))<sup>†</sup> 박신규(캐리어(주))<sup>\*</sup> 황인수(캐리어(주))<sup>\*\*</sup>

### Study on Low Frequency Characteristics of Rotary Compressor

Byoung-ha Kwon, Sinkyu Park, Insu Hwang

**Key Words** : Gas Pulsation, Muffler, Sound Intensity,

**Abstract** : Compressor is a major noise source of air-conditioner. Especially, its low frequency band noise below 1000Hz is very important because it will not be attenuated by passing through the cover panel and heat exchanger in air-conditioner. The factors affecting the low frequency band noise are studied by geometric similarity along with several experiments, and the low frequency noise is closely related with the discharge holes of muffler as well as the cavity of lower shell. The low frequency band noise is significantly reduced by proposed design.