

Method Development of Surge Analysis with Dimensionless Surge Number in Centrifugal Compressor

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The main purpose of this study is to find a clear practical guideline for engineering design of centrifugal compression system in terms of surge which can be used as early stage as possible. This study at first focused to find a significant parameter of compression system, and performed sensitivity analysis with (1) compressor intrinsic, (2) compression system, and (3) anti-surge parameters with regard to surge. And, from this finding, the significant parameters were combined together with its effect on surge to construct a dimensionless number, Surge Number. Further with the surge number, all of its distribution were analyzed to find a threshold number that can indicate a distinct safe or a distinct unsafe in terms of surge