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Multivariable Pressure Control in the Compression Station of Large–cale Helium Refrigerators by Quasi-Newton Methods

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Large–scale Helium Refrigeration is widely used in the fields of superconducting, nuclear fusion energy and high-energy physics. However, the present PID controlling system of the compression station is not well able to keep the high pressure and low pressure both in the expected range. In this paper, a multivariable model-based non-linear predictive controller for a Compression Station is proposed. The compression station is a non-linear system, so we use Quasi-Newton Methods to find PID gains. The Quasi-Newton Methods solution model and the simulation result is introduced and presented.

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