

# High pressure rinse simulations for PIP-II SRF cavities

*Monday 26 August 2024 16:00 (2 hours)*

The implementation of High Pressure Rinse (HPR) not only ensures thorough cleaning of the inner high purity niobium surface of Superconducting Radio Frequency (SRF) cavities but also unlocks their full potential for achieving peak performance. By effectively removing contaminants and impurities, HPR sets the stage for enhanced superconducting properties, improved energy efficiency, and superior operational stability. A simulation tool has been developed, facilitating the accurate prediction of both the quality and effectiveness of the rinsing process before its execution in the cleanroom. This tool, the focus of this paper, stands as a pivotal advancement in optimizing Superconducting Radio Frequency (SRF) cavity preparation. Furthermore, our paper will also present correlations with cavity cold testing results, demonstrating the practical applicability and reliability of the simulation predictions in real-world scenarios.

## Footnotes

## Funding Agency

This manuscript has been authored by Fermi Research Alliance, LLC under Contract No. DE-AC02-07CH11359 with the U.S. Department of Energy, Office of Science, Office of High Energy Physics

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**Session Classification:** Monday Poster Session

**Track Classification:** MC4: Technology: MC4.8 Superconducting RF