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Review of the complex baseband RF cavity model and its applications

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Recently the need has arisen to examine the effects of a variable coupling factor in the complex baseband RF cavity model. This paper briefly reviews the dynamic baseband model, then augments the model to include variable coupling. Power balance, asymptotic behavior and model simplifications are explored. Finally, applications of high-power RF pulse compression and transient heating in high-gradient RF cavity structures planned for use in the CXFEL project are modeled.

Footnotes

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