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ANALYSIS OF PERFORMANCE OF INTEGRATING SPHERE FOR IR ENHANCED DT ICE LAYERING*

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ABSTRACT

Absorbed IR energy can supplement the beta decay energy from DT ice to improve the driving force toward uniform layers. A significant problem with this approach has been to deliver the added IR energy with sufficient uniformity to enhance, rather than destroy, the uniformity of the ice layers. Computer modeling has indicated that one can achieve ~1% uniformity in the angular variation of the absorbed power using an integrating sphere containing holes large enough to allow external inspection of the ice layer uniformity. Systematic dependencies (layering power, heat load) on integrating sphere dimensions will be discussed.

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