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Dielectric Based Compact Accelerator for Industrial Applications

Tuesday, 20 April 2021 14:30 (15 minutes)

With this talk, Euclid presents a portable lightweight and cost-effective ~MeV range accelerator that is compact enough to operate as a module for an easy stack-up to increase the deliverable radiation dose. We focus on the technology to replace the conventional copper linac with a significantly lighter and more compact new type of dielectric accelerator. The use of high permittivity ceramics reduces the transverse size of the accelerator significantly, making the thickness of the accelerating structure comparable to that of an ordinary pencil. This allows not only in a sizeable weight reduction of the structure itself, but even more important, a substantial reduction in the weight of the lead shield needed to enclose the structure.

Summary

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Session Classification: Session 5