

Electromagnetic analysis of accelerating cell for 200 MeV separated drift tube linac in KOMAC

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Electromagnetic analysis is conducted to derive optimum design of the accelerating cell for 200 MeV separated drift tube linac (SDTL). First, 2D analysis is conducted utilizing Poisson-Superfish code. To derive accelerating cell design for efficient acceleration and preventing breakdown, optimum parameters are investigated pursuing maximized effective shunt impedance (ZTT) with Kilpatrick factor under 1.5. Based on the parameters found in 2D analysis, 3D analysis including stem and slug tuner is conducted utilizing CST Microwave studio. Adjusting length and position of slug tuner, resonance frequency is tuned for the targeted value and average axial electric field in each cell is tuned less than 1% variation.

Paper submission Plan

Yes

Best Presentation

No

Contribution track

ICABU WG1. Accelerator Systems

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