

New Scientific Opportunities with the TRIUMF ARIEL e-linac



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Fermilab $g-2$ result and prospects for MeV-scale new physics

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We study new physics scenarios that resolve the muon ($g - 2$) μ anomaly with only Standard Model singlet particles coupled to muons. Since such models are only viable in the MeV – TeV mass range and require sizable muon couplings, they predict abundant accelerator production through the same interaction that resolves the anomaly. We show that B-factories and high energy colliders can respectively probe the middle (0.1 - 10 GeV) and high mass (>10 GeV) regions of viable single masses. Searches for light singlets (<0.1 GeV) are better suited for fixed target experiments. We show that a combination of these experiments can cover nearly all viable singlets scenarios, independently of their decay modes.

Attendance

Contact Email

Scheduling Constraints

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