

Proton Driver R&D Projects

- Proton Driver specific:

- Fast RF tuner and other sc RF R&D
- Beam pipe prototyping
- H- source
- Stripping foil

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red: funded
green: partially funded
dark blue: waiting

- Related Proton Plan projects in the Booster:

- Large aperture Booster RF
- Dual harmonic power supply test at E4R
- Laser chopping

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- Related Run2/NuMI projects in the MI:

- WQB (large aperture quads)
- Fast ramp (1.5 s NuMI cycle)
- RF
 - Two PAs per cavity
 - New cavity design
- Collimation
- Gamma-t jump
- Kicker upgrade
- Replacement of old MR quads

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8 GeV H⁻ and Carbon Foil Calculations

What we are calculating:

- (1) H⁻ field stripping (Bryant, Chou)
- (2) H⁻ gas stripping (Chou)
- (3) H⁻ foil stripping efficiency (Chou, Burgdoerfer)
- (4) Energy deposition (Chou, Drozhdin)
- (5) Temperature rise and stress analysis (Tang)
- (6) Multiple Coulomb scattering and emittance dilution (Chou)
- (7) Radiation dose (Mokhov)
- (8) Lifetime of H⁰ excited states in a field (Drozhdin, Chou)

What remains to be done:

- (9) H⁰ excited states population (? difficult)