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Update on IFE Aerosol Analysis

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Needs in Modeling Work

- **1-D Radiative Gas Dynamics Model**
  - no improvements added since last presentation
  - need to add properties for ionized species of FliBe
  - need to add ion heating from target debris

- **Wall Condensation Model**
  - working with UCSD to add enhanced vaporization and phase explosion to liberate mass
  - need to include evaporation from the surface that leads to heterogeneous particle formation

Needs of Aerosol Modeling Work, cont.

- **Aerosol Model**
  - single component particles now used, but considering extension to multi-components to better simulate FliBe
  - need to add ion-induced nucleation

- **Wall Thermal Response Model**
  - model now solves energy and mass transport between wall and chamber in a self-consistent manner (removing the need of grossly oversimplified assumptions as in the previous analysis)
  - added volumetric heating source from x-ray attenuation to drive wall response
  - need to add ion heating???

A detailed wall thermal response model has recently been incorporated. A few bugs need to be worked out before proceeding to the next stage of IFE aerosol analysis.

Cases to run in the next few weeks:

Liquid Lead:

- run with volumetric heat rates provided by UCSD

- run with mass from explosive ablation layer and 2-phase region as the aerosol source term (mass will be added at constant T)

FLiBe:

- incorporate properties of pure FLiBe (non-dissociated)

- run with volumetric heat rates provided by UCSD

- run with mass from explosive ablation layer and 2-phase region as the aerosol source term (mass will be added at constant T)