



75 **Los Alamos**
NATIONAL LABORATORY
— EST. 1943 —

Effect of Corner Reflection on the Critical Mass of Plutonium

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ANS Annual Meeting 2018

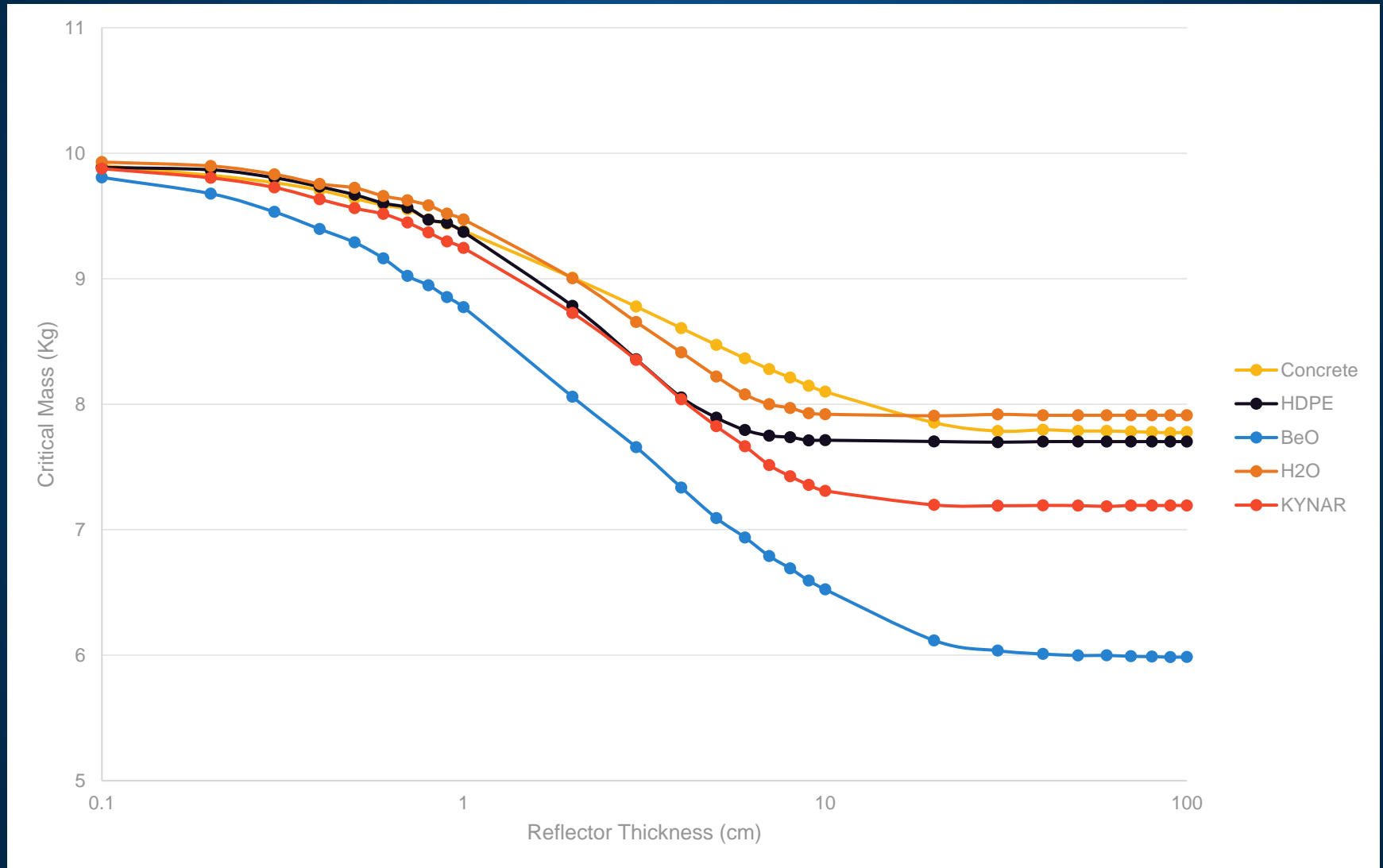


Operated by Los Alamos National Security, LLC for the U.S. Department of Energy's NNSA

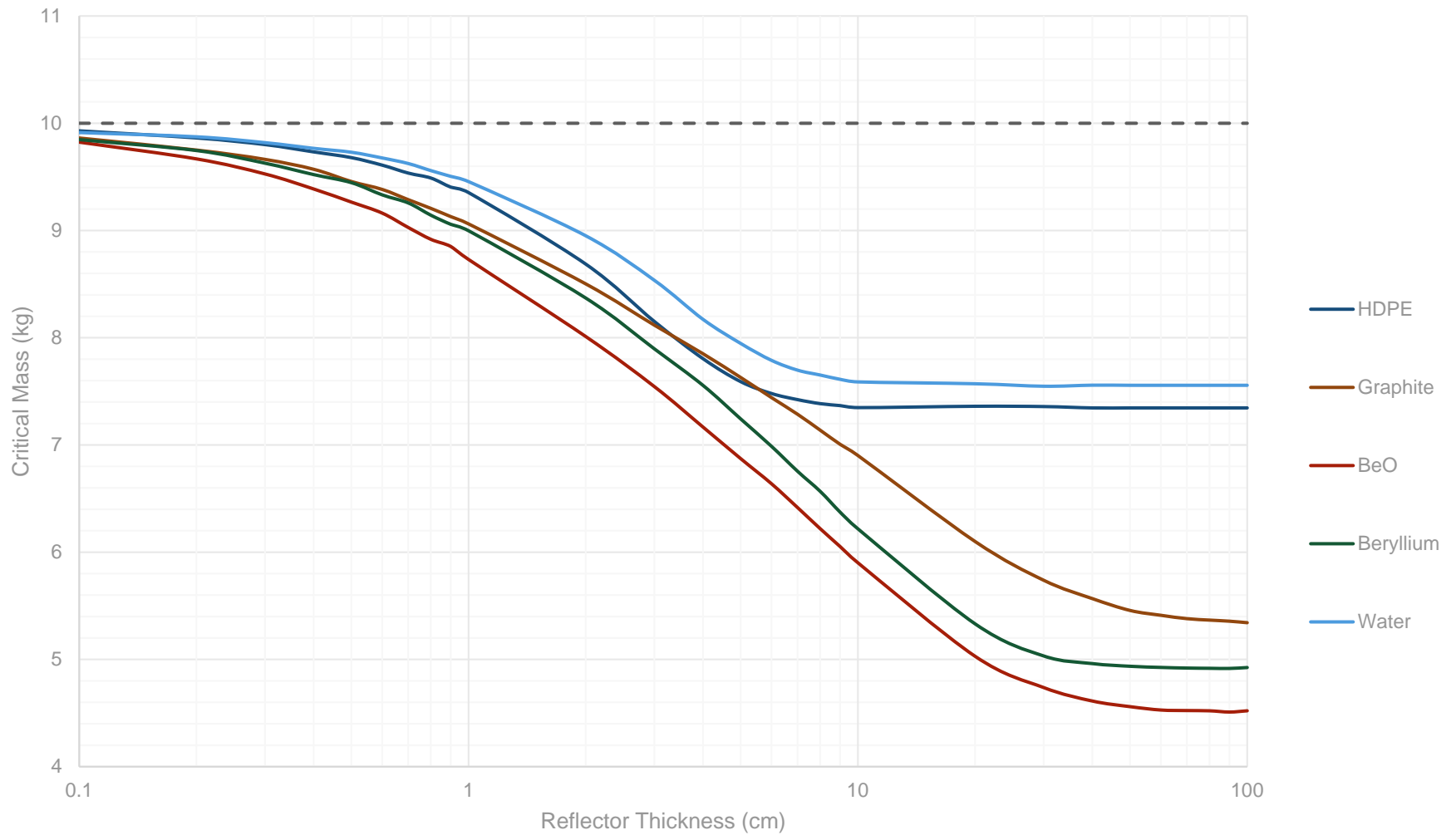
It's not tight fitting – what can we credit?

- Pu in a corner
- Pu in a box
- Single material comparisons
- Relationship between partially reflected mass and 4 Pi masses

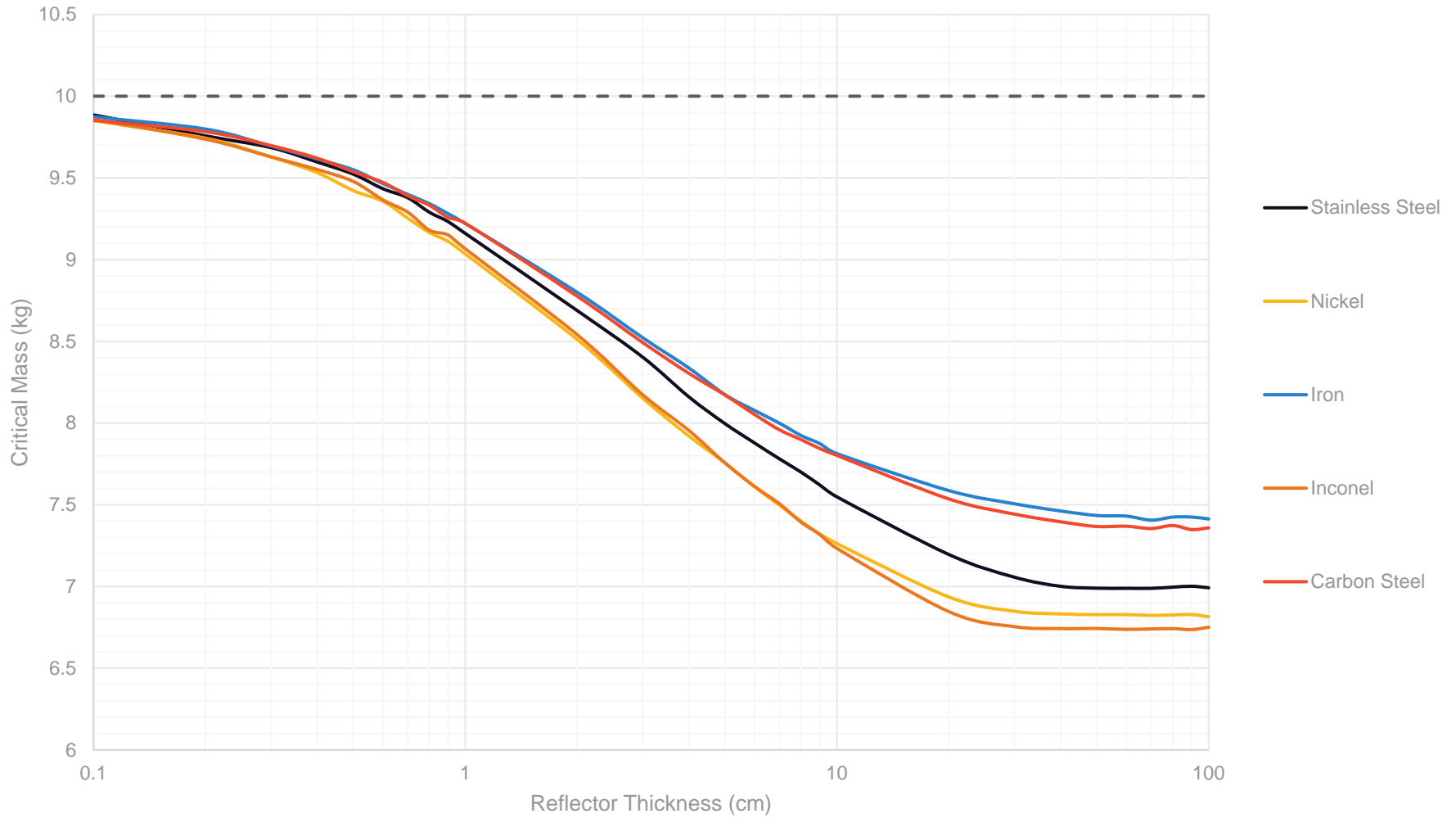
Corner Reflection



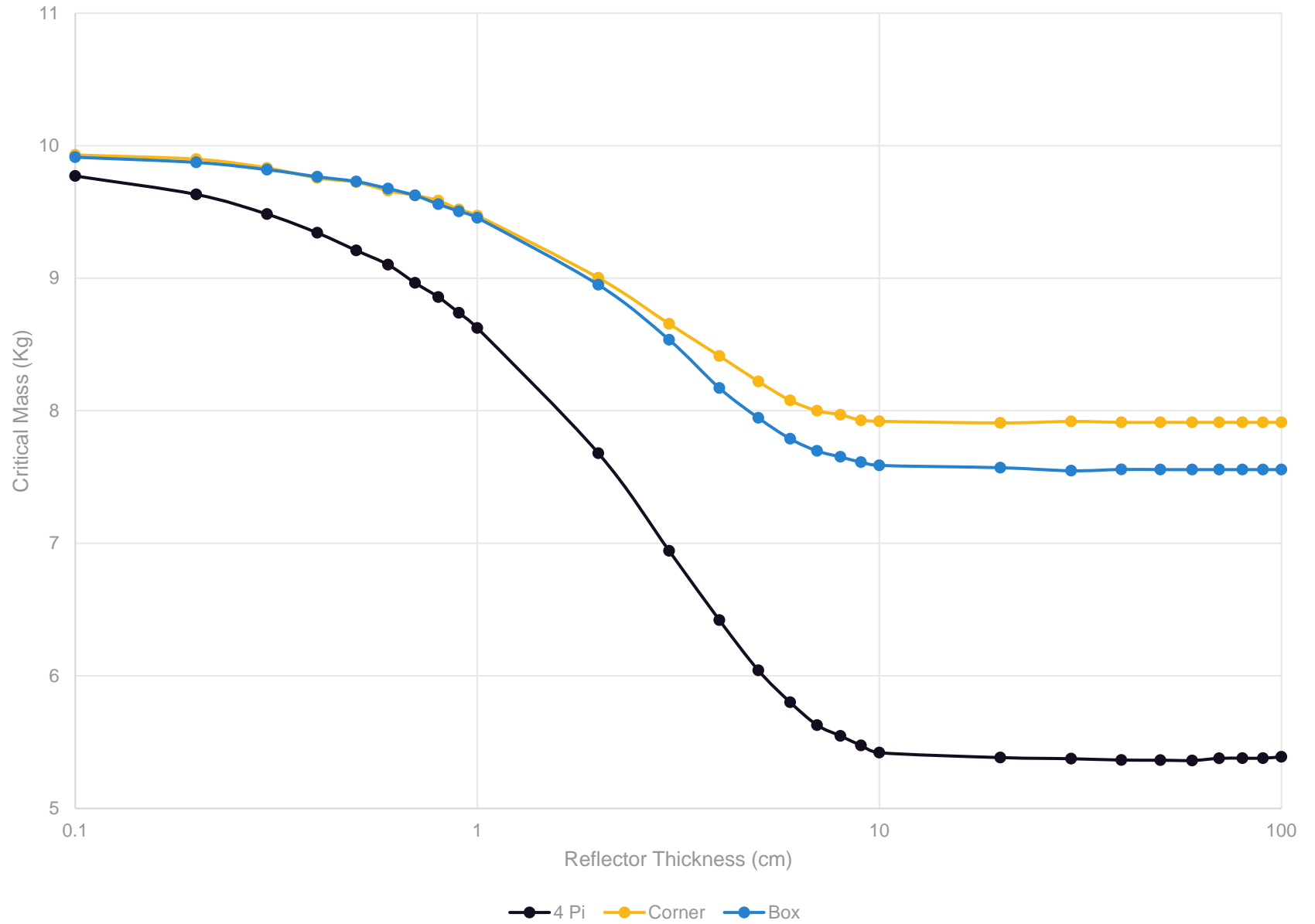
Pu in a box: moderators



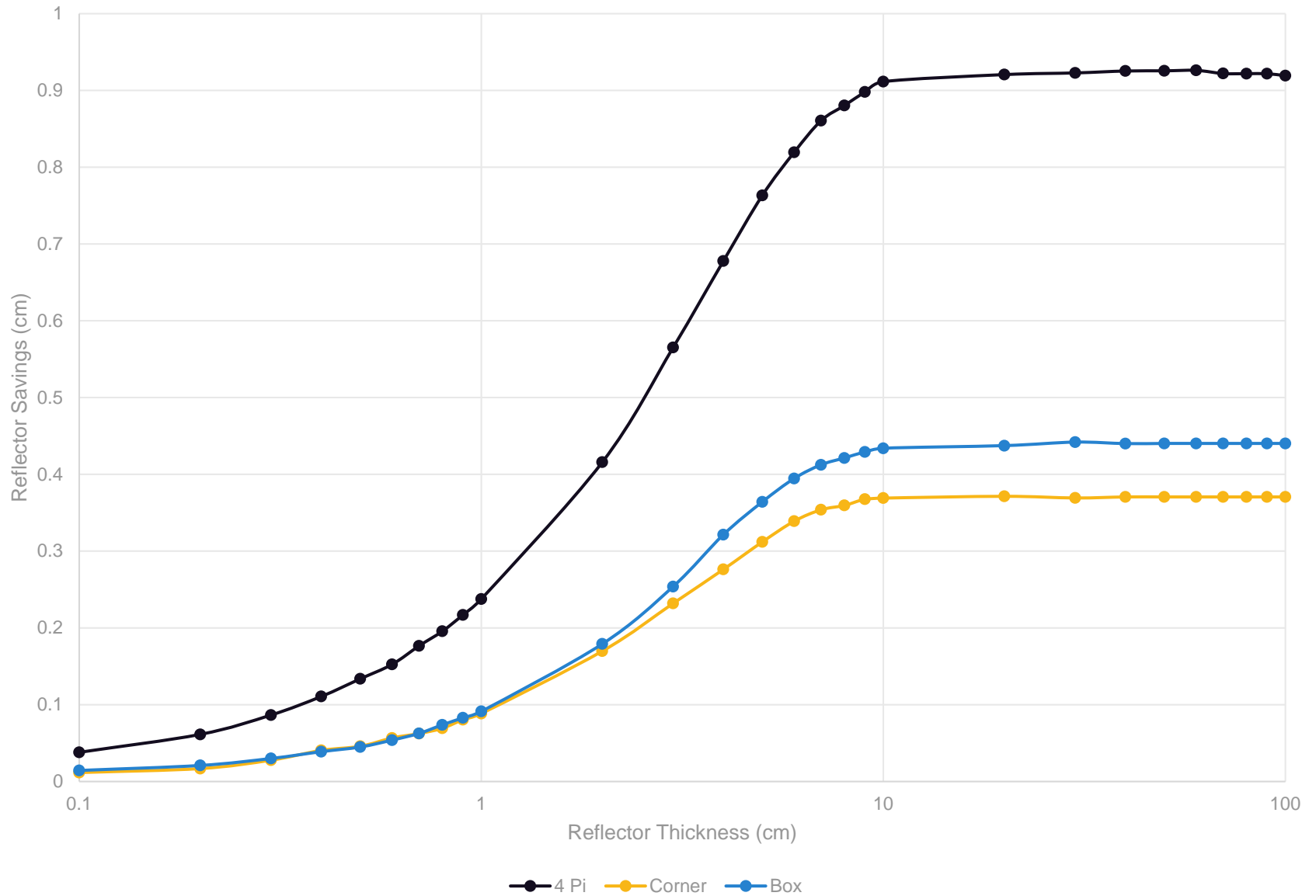
Pu in a box: iron and nickel Alloys



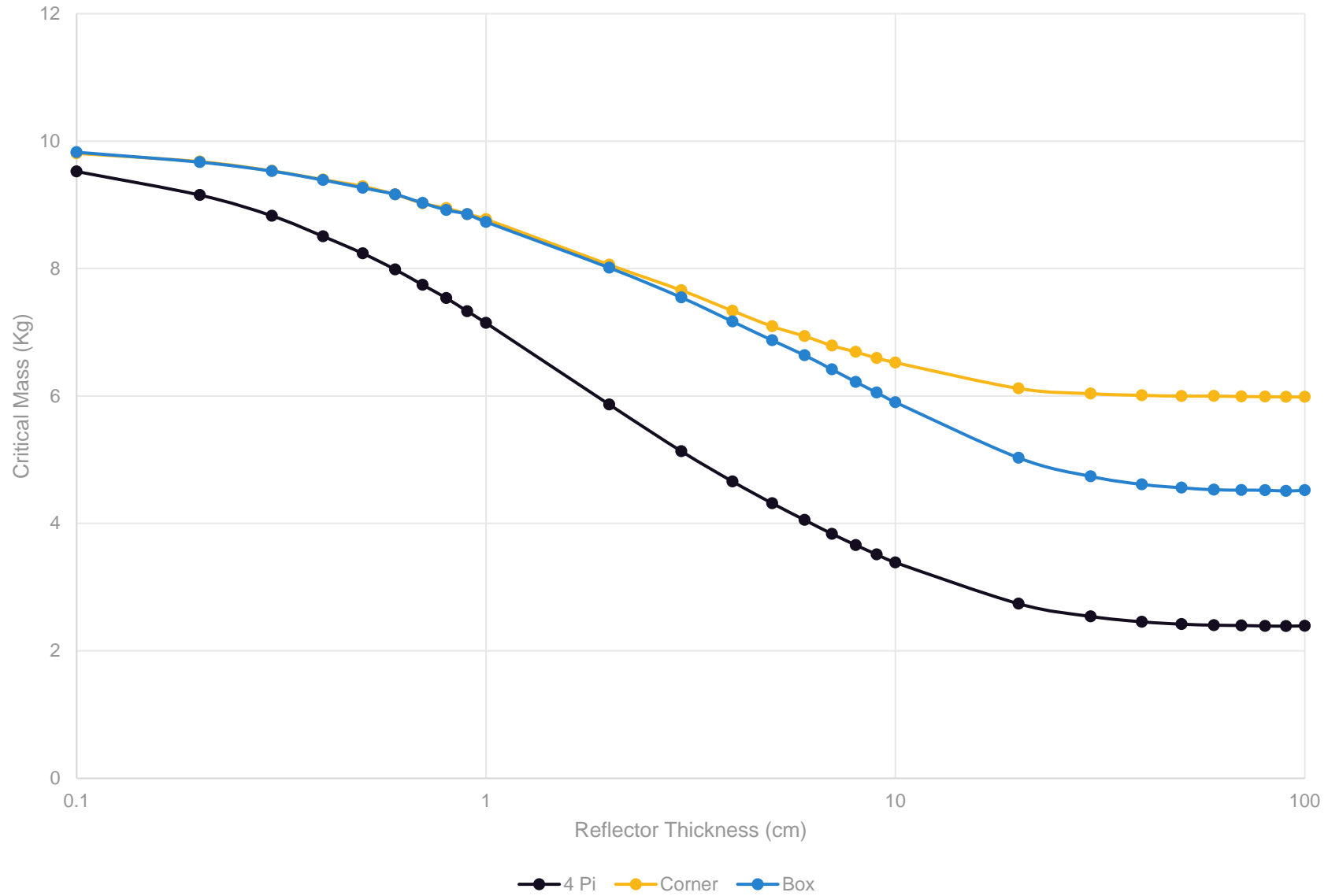
Water



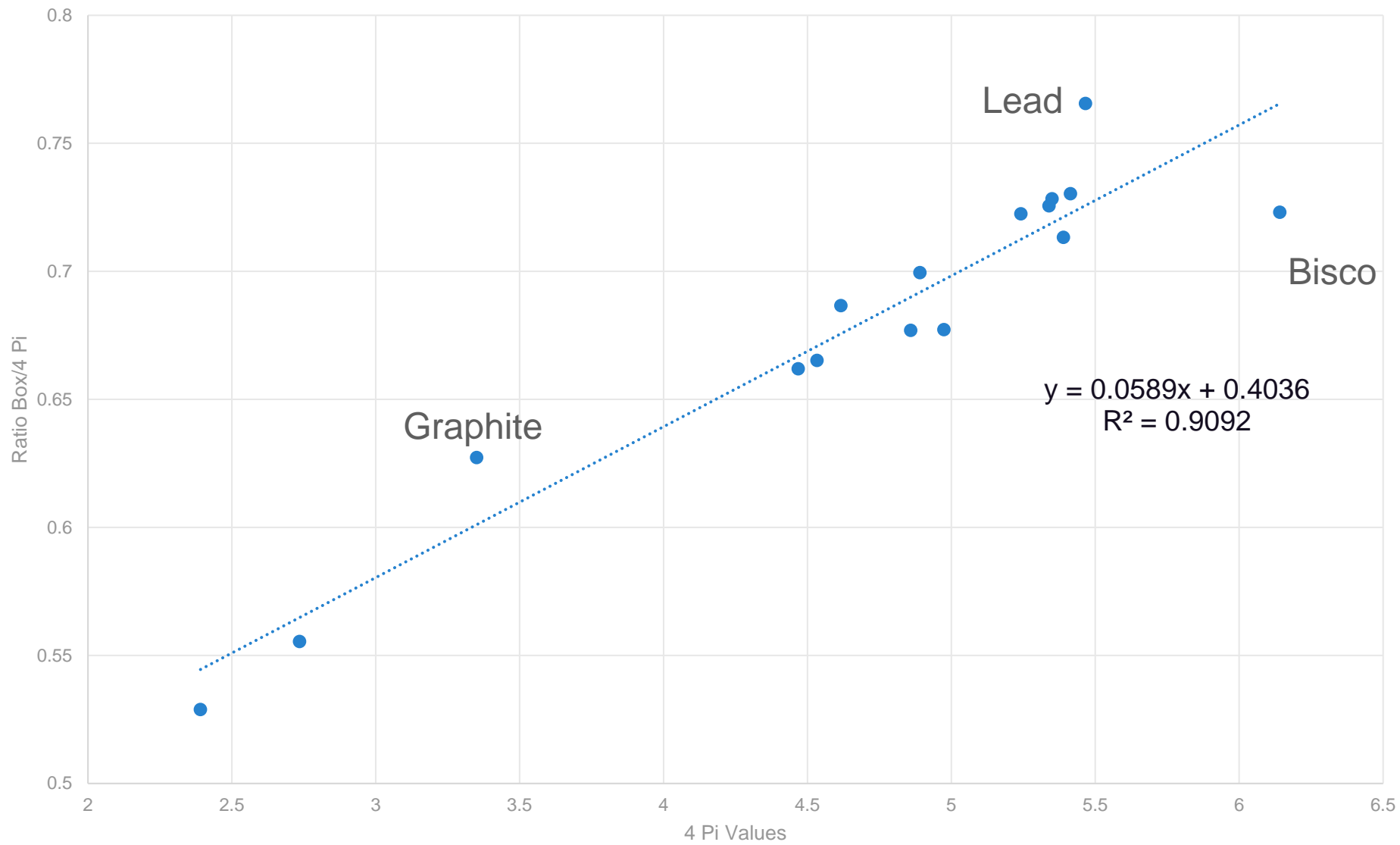
Water - Reflector Savings



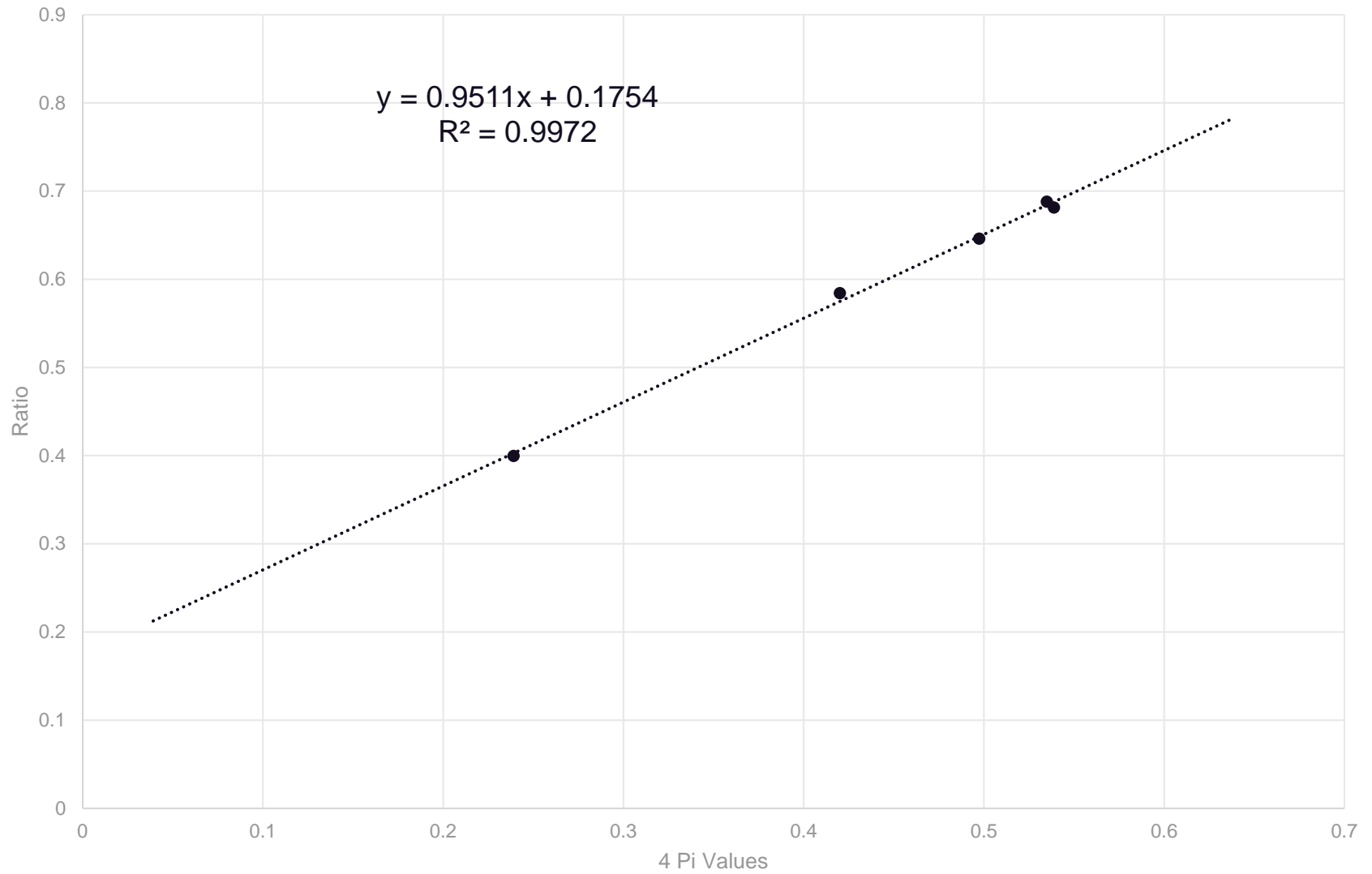
BeO



Box vs 4 Pi



Corner vs 4 Pi



What Next?

- Add more reflectors to corner data
- When does a box become a corner?
- Would the box correlation be better in terms of absolute size rather than relative?
- Figure out Box outliers