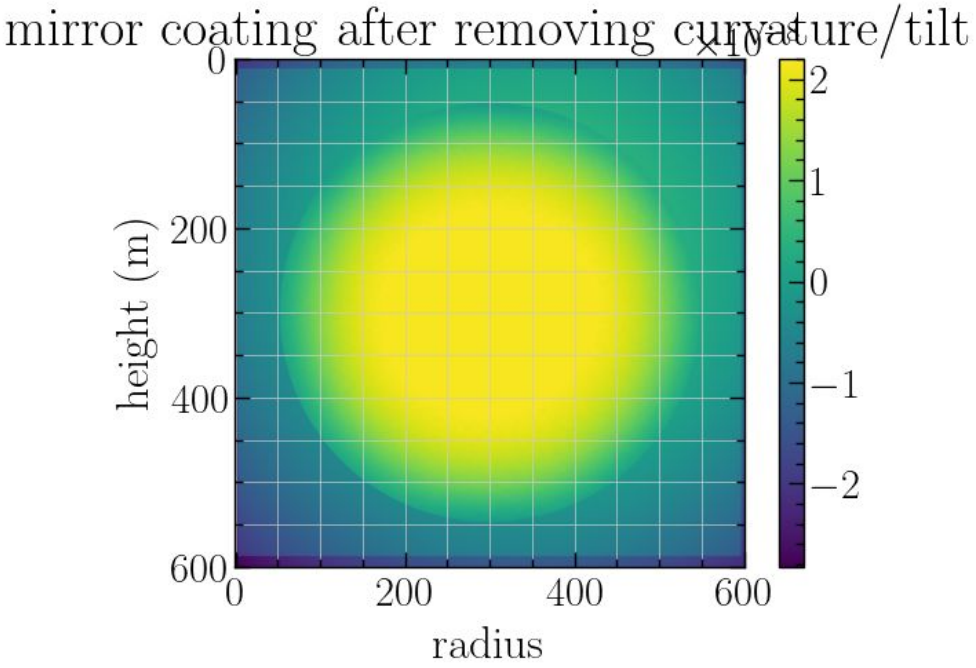
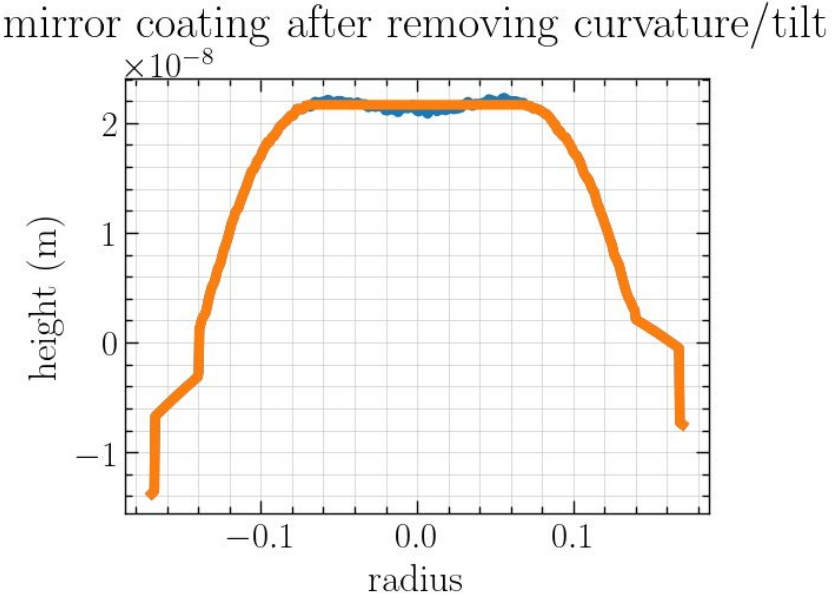
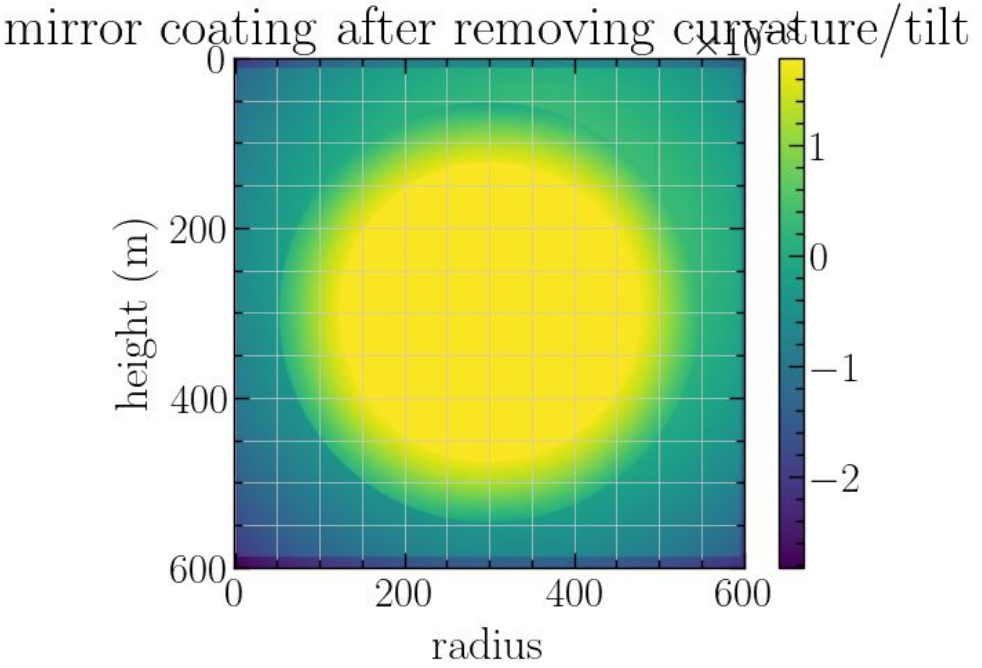
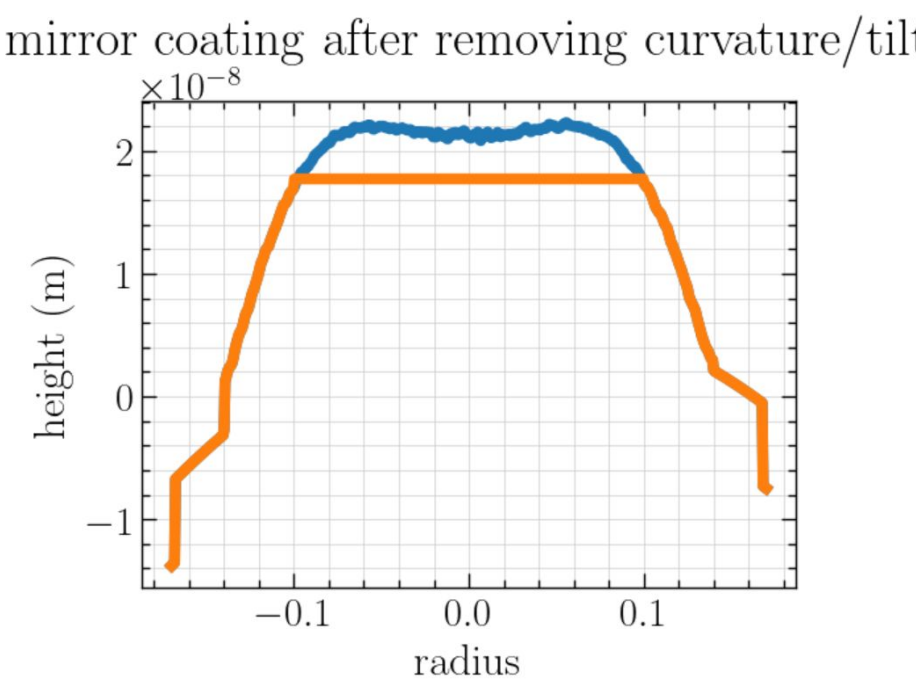
Attempted to flatten the top of the mirror and see if it improves cold state arm power: Flattened up to radius of 0.07m: for storing 1500kW of arm power the required input power went from 268W to 264W compared to approximately 220W in PRL paper



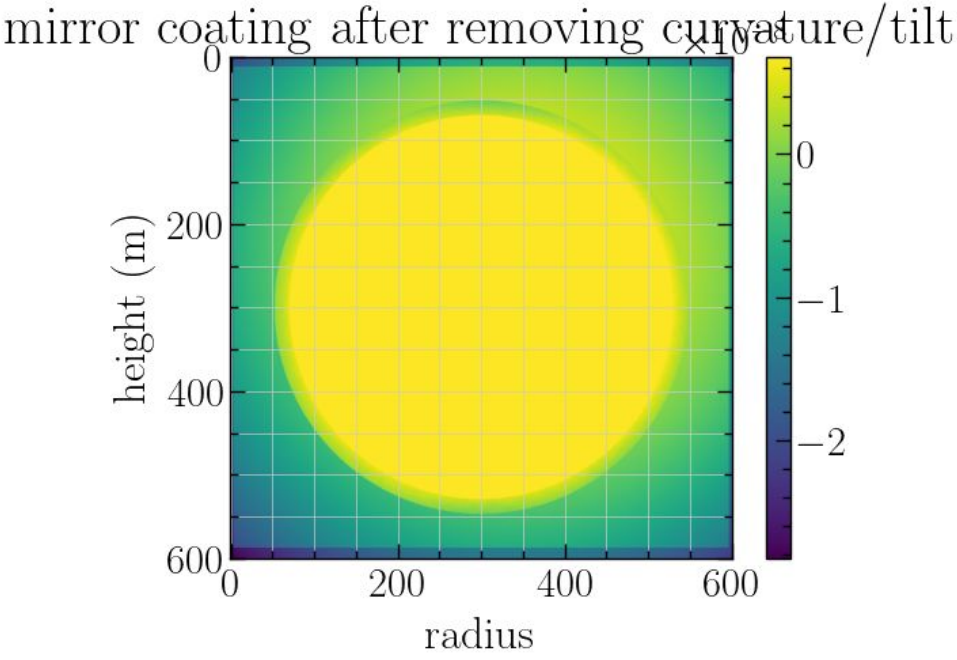



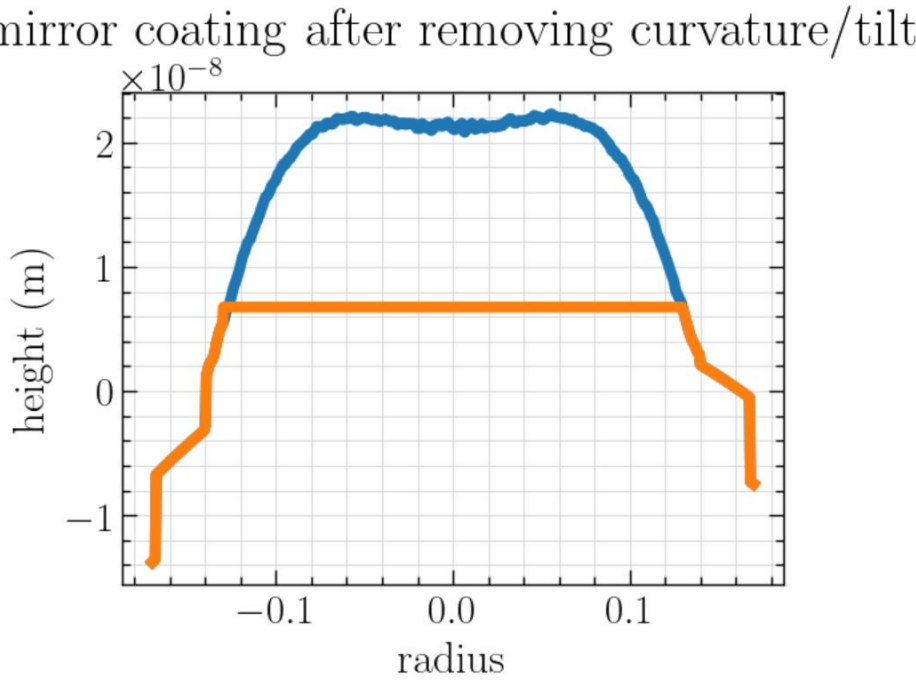
# Flattened to 0.1 m instead: input power improved from 264W to 237W



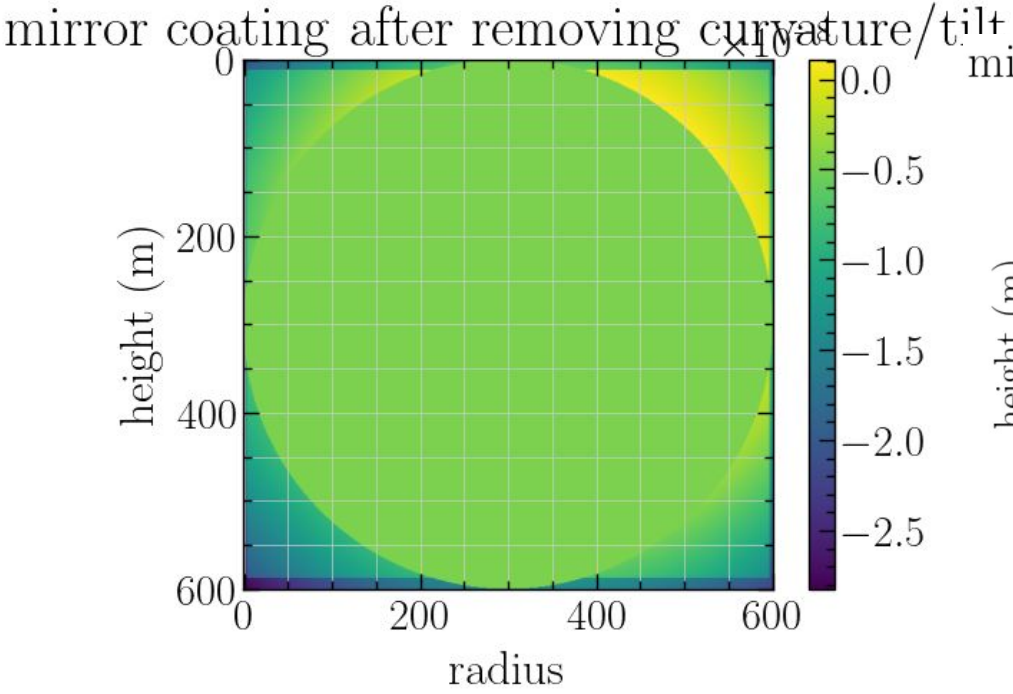



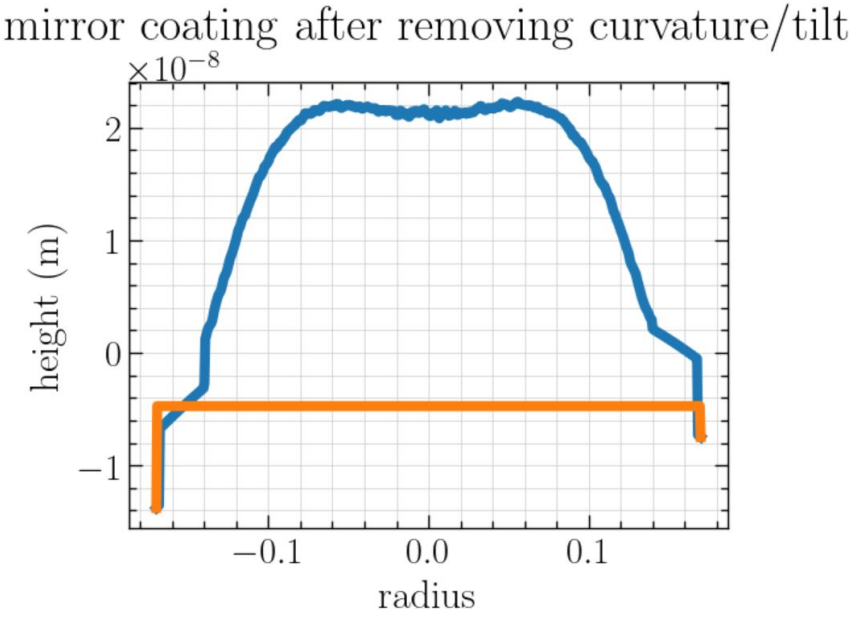
# Flattened to 0.13 m instead: input power improved from 237W to 228W



Power stay at 228W after supposedly fully flattening the mirror, most likely due to the unevenness outside of coating after removing tilt: (my original data stores 0 everywhere else of the coating, remove tilt aligns the top part to be straight, by tilting the whole data by some angel, so now my 0 everywhere else data might become non-zero at some location seen in the graph



# conclusions

- I also tried to use a “perfectly spherical mirror” data by setting all my coating data values to 0, and it indeed reproduce the result from PRL paper (now 222W for arm power of 1500kW, which looks consistent with the graph)
- so other than the 6w of inconsistency from flattening mirror method, we can say that most of the discrepancy came from the top part of the coating and the code itself should be consistent with the PRL paper.

# Observed squeezing result (if time permits)