

## NUCLEAR

### COMPUTATIONAL MODELING

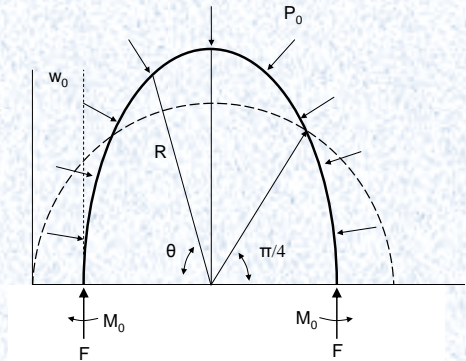
➤ Nuclear core phenomena models:

- Fuel rod bow
- Creep collapse and creepdown
- Control rod assembly (CRA) free fall through guide tube assemblies (SCRAM)
- Grid-to-rod fretting

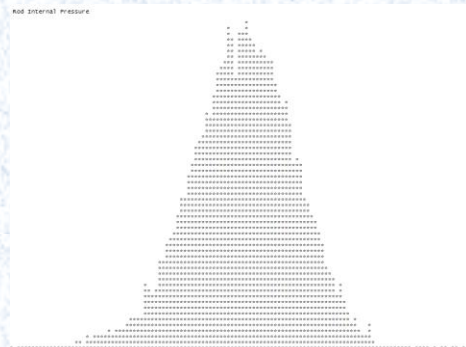
➤ Monte-Carlo simulation of nuclear core around traditional FRAPCON software

➤ Coding Languages:

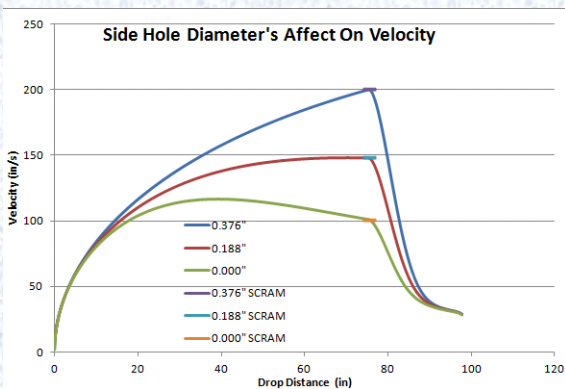
- FORTRAN (77,90,95)
- Q-Basic
- C++



**Fundamental Free-Body-Diagram of Creep Collapse**



**Above: Histogram of RIP after a Monte-Carlo simulation of FRAPCON**



**Left: The guide tube pressure release holes affect CRA velocities during SCRAM events**

