

# Interactive geometry plotter for Serpent

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# Motivations

- Serpent features a built-in geometry plotter
  - Can produce print-quality geometry plots
- But, it is not interactive
- Sometimes many Serpent runs are needed
  - to get desired view and colors



# Short overview

- General
  - Client ↔ Server approach
  - Implemented in C++ by using the Qt framework 4.8.4 and Qxt library
  - Use of Qt Creator for development
- SerpentServer
  - Server application for running Serpent
  - Includes the SerpentKernel library
  - Only 3 lines added to the Serpent sources
  - Interacts via network with the client application SerpentGUI
- SerpentGUI
  - User interface for SerpentServer control
  - Connects to a server
  - Sends input decks, controls the run
  - Requests infos and plots from the server and presents it

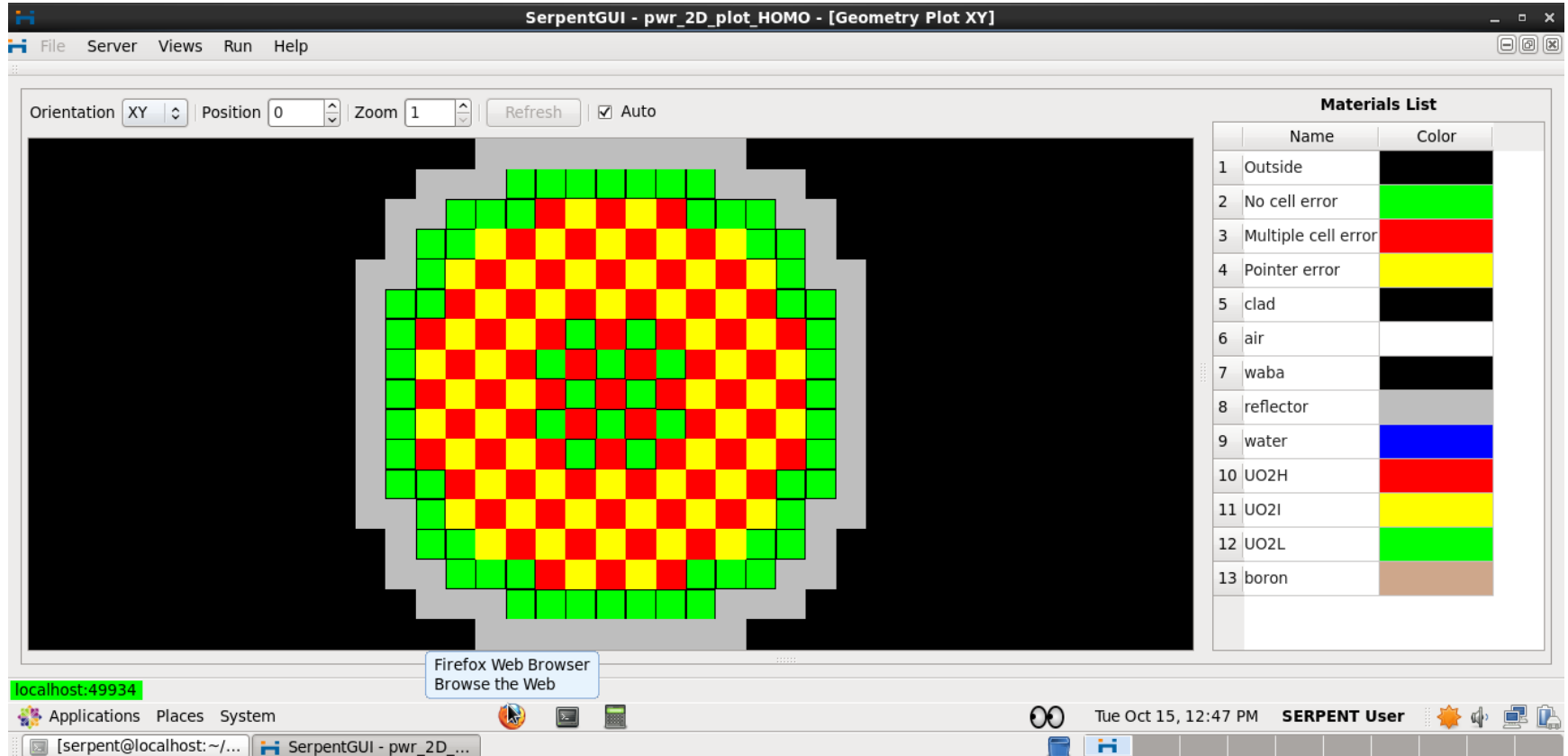


# Short overview

- Operating systems
  - SerpentGUI – Windows/Linux
  - SerpentServer – Linux
- Bypassing the limitations using Oracle VirtualBox
  - Can be distributed as VDI file
  - VDI = Virtual Hard Disk
  - VDI = image of the operating system, [plotter included](#)
  - Can be run on Linux, OS X, Windows

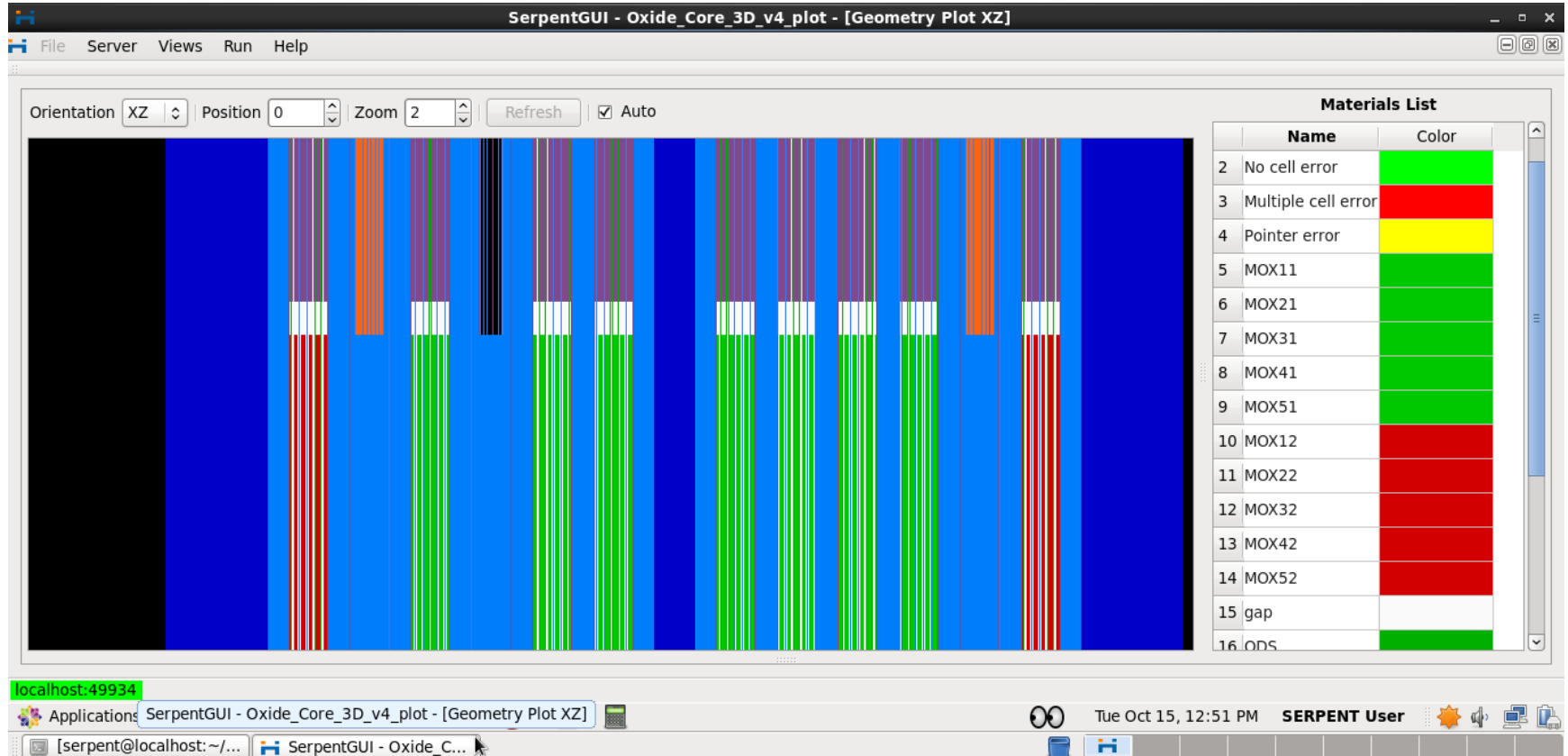


# Snapshots: PWR x-y plot



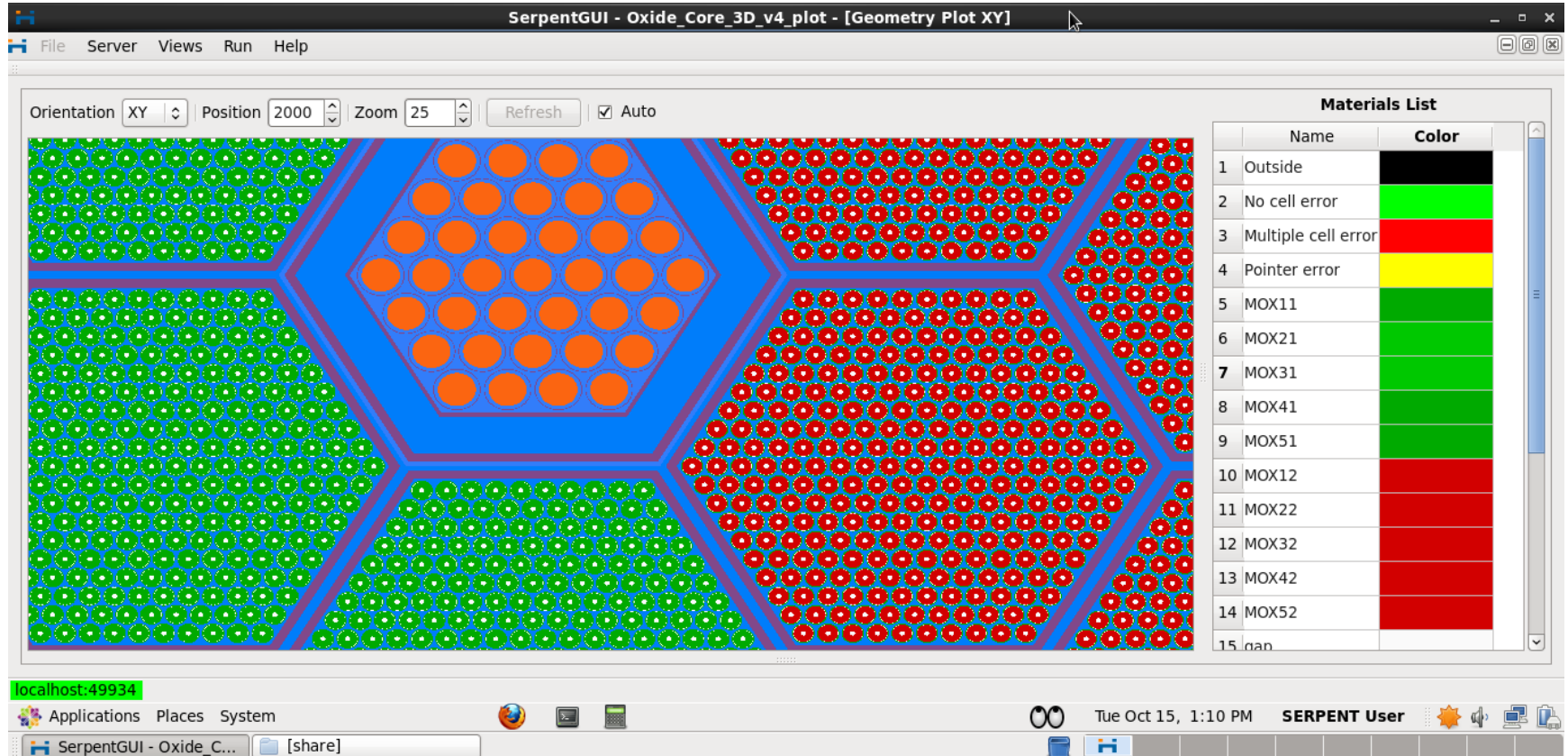


# Snapshots: zoomed SFR x-z plot



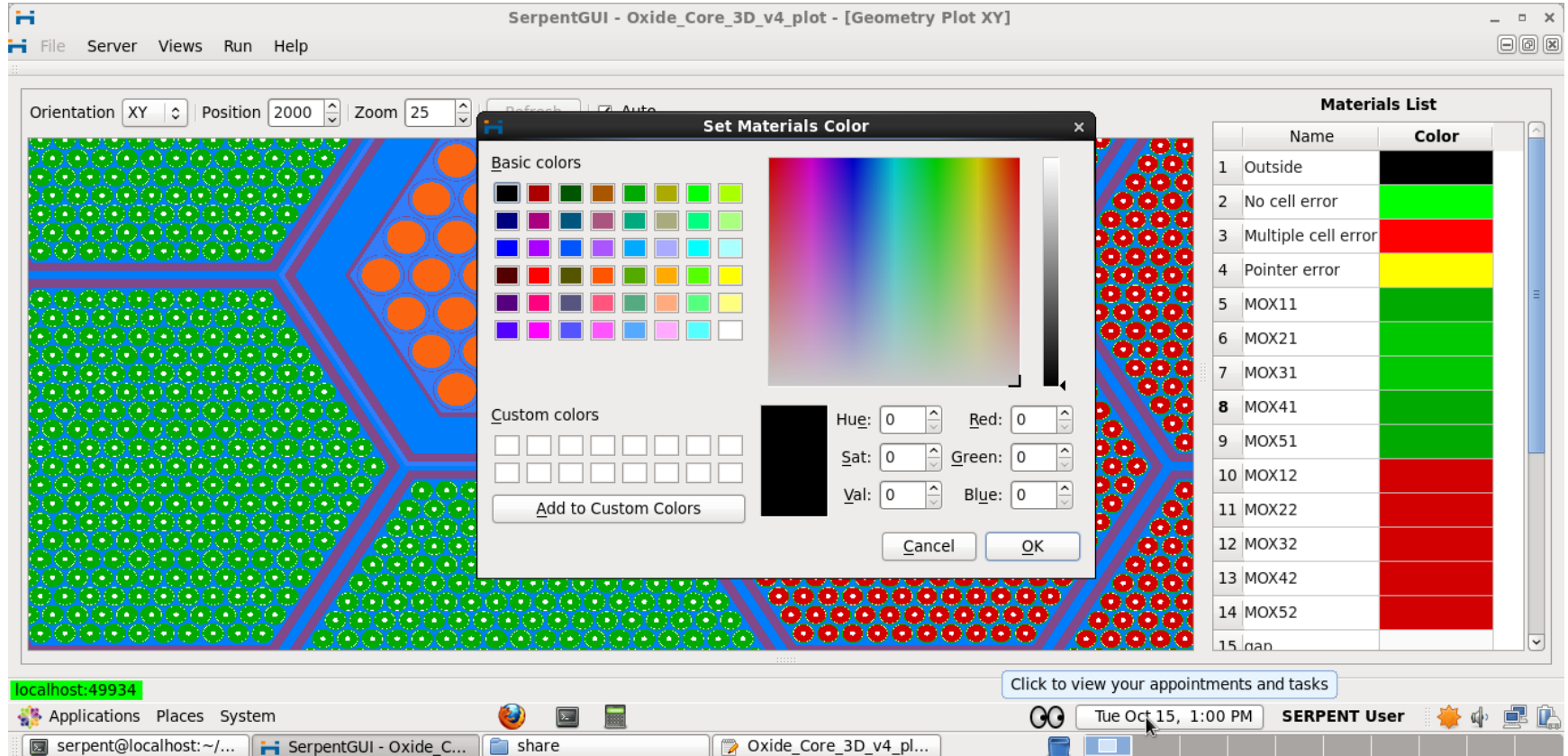


# Snapshots: changing material color





# Snapshots: changing material color









# Future steps

- Is there any interest in the plotter?
- If yes
  - Start with a distribution to the community
  - Debugging
  - Adding functionality?
  - Development of interactive postprocessor?