

Mathematical Physics for Teachers

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Purpose

- ***Introduce the Raspberry-Pi as an educational tool.***
- ***Introduce some of the educational resources that come with the Raspberry-Pi.***
- ***Some basic training on using Linux and the functionality on the pi.***
- ***Introduce mathematica on the pi***
- ***Demonstrate simple problem solving using mathematica.***
- ***Discuss how tools like this could be introduced in African schools including difficulties and opportunities.***

Why ?

- ***www.raspberrypi.org for more information.***
- ***The raspberry-pi is a compact ARM based computer with a lot of functionality.***
- ***It needs USB power through a micro-USB connector.***
- ***Has 4 USB ports, 1 HDMI output, 1 ethernet, 1 audio out, WIFI, GPIO capability. Can be used with many other low cost components.***
- ***System is built on a micro-SD card. Comes with delian-linux (rasbian) with many educational tools including games. Comes with Mathematica.***
- ***Supported by a large global community that is interested in making computing easy and fun.***



***Cost is US\$35/each
with cables and microSD cost
goes to ~US\$50-60***

Plan

- *Provide simple introduction to mathematica.*
- *Will provide sample notebooks to practice and solve some problems with graphical output.*
- *Each pi has 4 cores. If setup as a multiuser system. This can easily run 2-3 instances of a program.*
- *ssh X11 forwarding can be used to connect through the workstations that are already present.*
- *Will need 30-40 units with corresponding number of network slots and USB power.*
- *BNL will prepare the micro-SD cards with appropriate settings. 3 hours will be divided in*
 - *1) introduction to the pi,*
 - *2) introduction to mathematica,*
 - *3) Exploration of the provided notebooks.*
- *If successful discussion on future followup will be needed during the school.*