AGATAGeFEM

A FEM approach to pulse shapes



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Main ideas and concepts

- Adaptive FEM to calculate the potentials
- No "projection" to rectangular grid
- Adaptive time step
- A laptop enough to (re)calculate your base before lunch
- Use of high-quality GLP software dealii, gsl, libmesh, gmsh, OpenCascade...

Some history... AGATAGeFEM 2007



- The results where nice...
- ...but too slow!!!

"grid-0UCore.gnu" ------



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• Point where to calculate Φ





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To find correct cell... Make look-up table

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To find correct cell... Make look-up table Identify possible cells...

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To find correct cell... Make look-up table Identify possible cells... Find correct cell...

This consumes a lot of CPU!!!





Same intrinsic problem but much less calculations in each step. 1 pos/min \rightarrow 50pos/sec !!!

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Refinements helps

• Compare with scan data

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- Compare with JAZZ and Bart (;)

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- On-site characterisation

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- …and a good geant4 simulation of AGATA
- Source data (to simplify geant4 AGATA sim.)

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- ... conditioned on transient signal asymmetries ...

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- …and a good geant4 simulation of AGATA
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- ... conditioned on net-charge segment ...
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... and hope that it works!!!