Full Simulation Status

SuperB Workshop,
Orsay

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16 February 2009
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Outline

• The importance of Full Simulation
• Status of IFR at Elba meeting
• Status of IFR now
• Digitization
• Conclusions and open issues
Importance of full simulation and evolution of IFR geometry

A full simulation is important for background simulation, detector optimization and for extracting parameters for fast simulation.
The IFR at Elba meeting

Some problems with alignment of endcaps due to the version of ROOT

We don’t have the corner blocks

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The IFR now

correct alignment

inserted iron union between sextants and corner blocks

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Digitization (I)

- The main idea of digitization for IFR is to collect hits of same track in one layer.
- With digitization we can decrease the dimension of hits collection.
- Now in the preliminary version of digitization we check of an GHit: trackID, layer and position.
Digitization (II)

• With Bruno we can shot a gun particle.

• Now we can compare the digitization shoting 1000 muon (for example).
Digitization (III)

Not digitized:
309 GHits
Digitization (IV)

Digitized: 145 Hits

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Digitization (V)

Red = GHit
digitized

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Digitization (VI)

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## Digitization Summary

<table>
<thead>
<tr>
<th>Digitization for 1000 muon</th>
<th>YES</th>
<th>NO</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>computing time</td>
<td>25 s</td>
<td>24 s</td>
<td>+4%</td>
</tr>
<tr>
<td>dimension of file .root</td>
<td>0.8</td>
<td>1</td>
<td>-20%</td>
</tr>
</tbody>
</table>
Conclusions and open issues

• Geometry *.gdml files are working
• Good Tool (Bruno) for full simulation
• With Bruno we can shot every particle
• First version of digitization are working and the dimension of hits collection decreases of 20%.
• We have to improve digitization considering the position.
• Study of hadronic showers to be done