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Subject: info on charged particle simulations into NeuLAND

Posted by [PaoloR](#) on Tue, 07 Feb 2017 12:38:12 GMT

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Hi,

I am back in working on simulating NeuLAND response to charged particles after a long stop. I have downloaded the latest R3Broot version (dev).

Could someone inform me about which is the status of simulating NeuLAND response to charged particles and which is the best strategy to do that, i.e. which macros/processes and settings are tuned for that?

I see a folder macros/r3b/neuland/chargedparticles but the GEO files required by Step1\_Simulate (neuland\_v2\_1400cm\_30dp.geo.root,r3b\_cave\_vacuum.geo) are not in the repository.

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Subject: Re: info on charged particle simulations into NeuLAND

Posted by [Jan Mayer](#) on Fri, 10 Feb 2017 14:17:06 GMT

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Hi,

welcome back.

First, the missing files:

- 'r3b\_cave\_vacuum.geo' is simply 'r3b\_cave.geo' with 'vacuum' instead of 'Air' in line 3. This does make a significant difference (as you would expect for charged particles flying through 14m of air). I'll commit it to the repository for convenience.

- 'neuland\_v2\_1400cm\_30dp.geo.root' needs to be generated, as there are too many variations to include them all. Run

```
root -l -q ${VMCWORKDIR}/macros/r3b/geo/create_neuland_demo_geo.C(30, 1400, "v2_1400cm_30dp")
```

The macros are not completely up to date but should be enough to start looking into the matter. Here, some primary charged particles with ~same AMeV are generated.

I'm not quite sure what you want to know about the response of NeuLAND to charged particles. Due to the huge amount of material, the total energy can be obtained for many ions/energies. One can, in principle, do the full  $\Delta$ EE shenanigans, see the attached example for p,d,t,He-3,He-4 with fixed ~300 AMeV and an ~100-600 AMeV range.

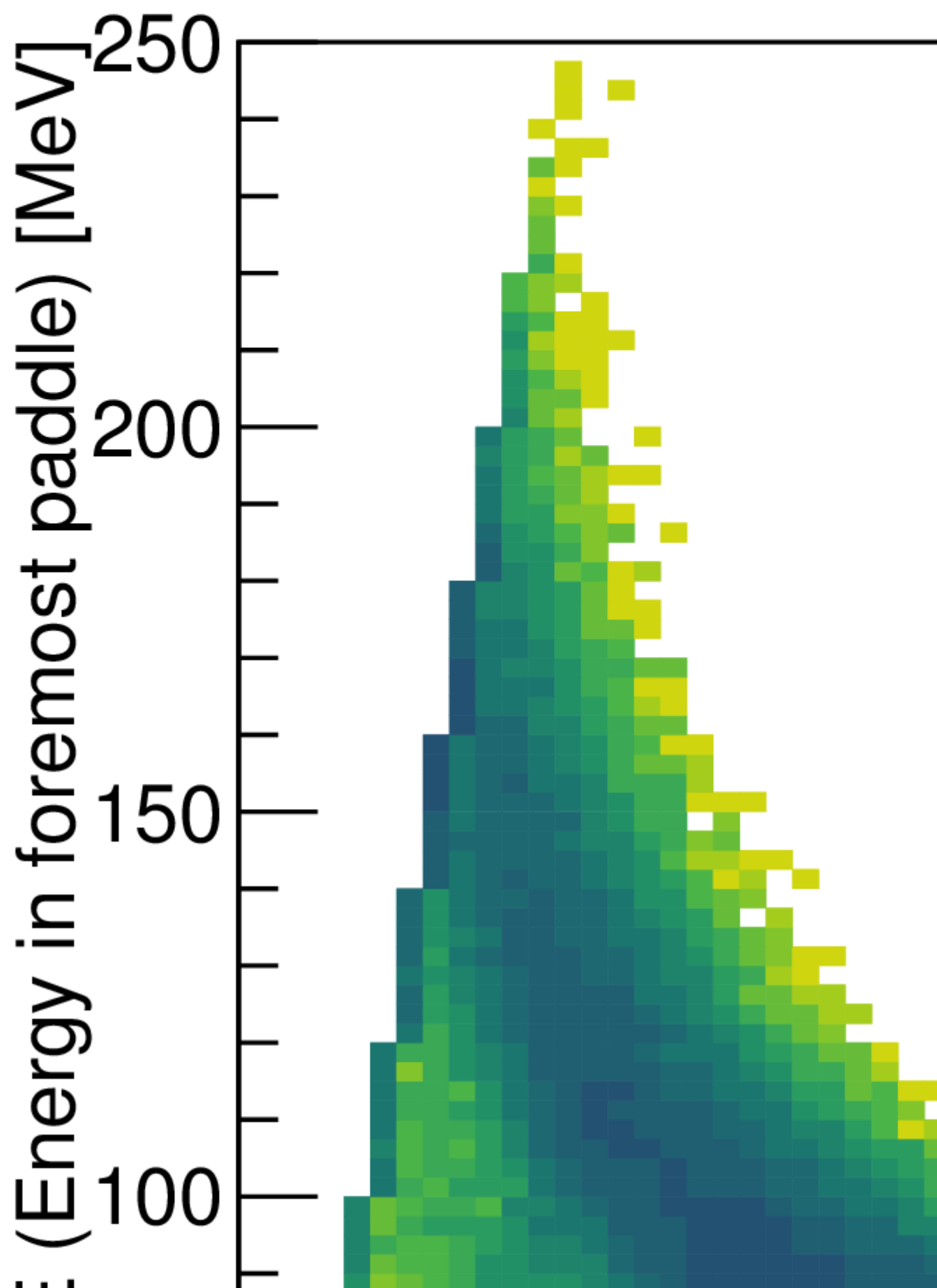
Best,  
Jan

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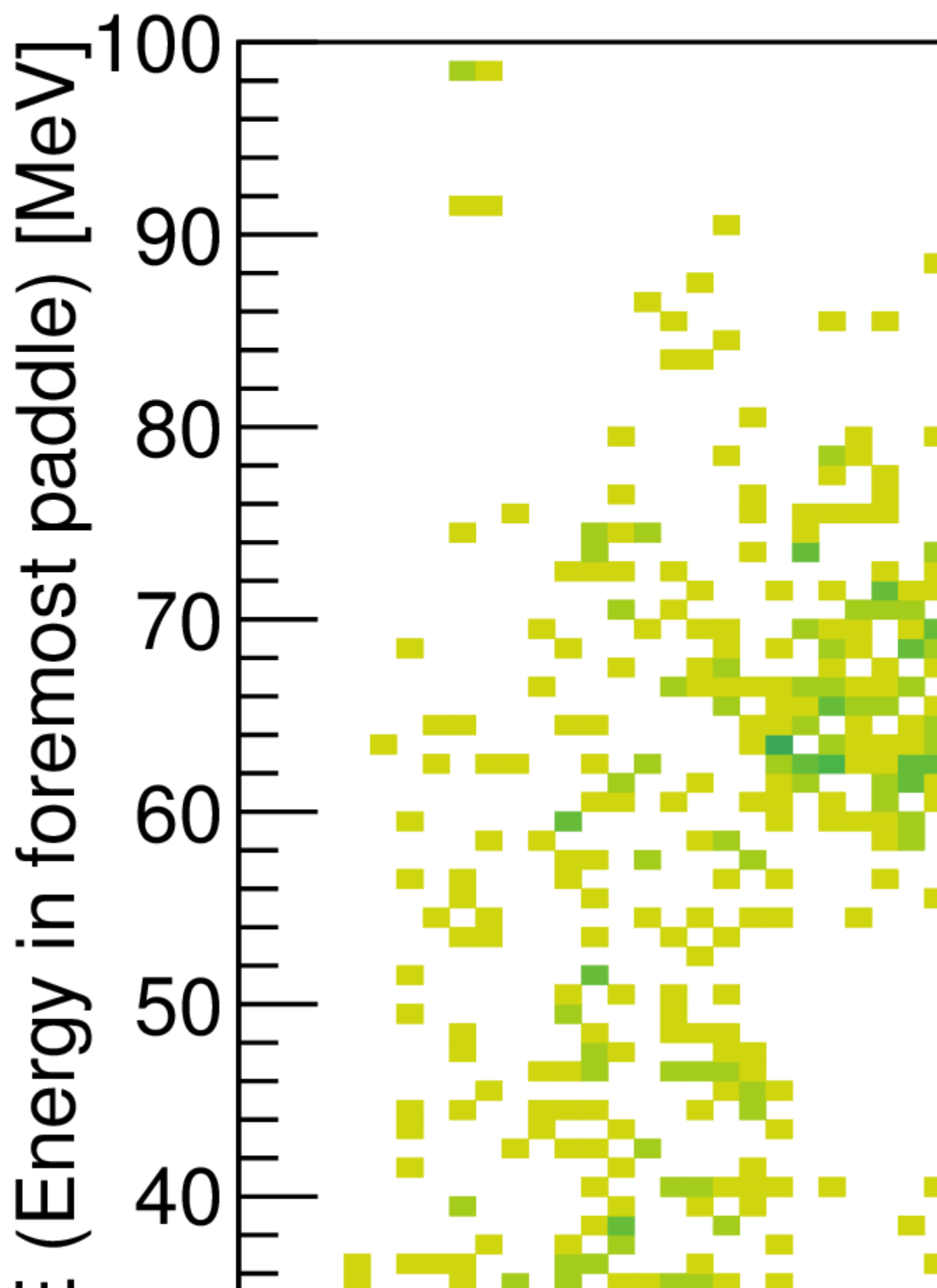
## File Attachments

1) [deltaEE-range.png](#), downloaded 418 times

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2) [deltaEE.png](#), downloaded 345 times



Subject: Re: info on charged particle simulations into NeuLAND

Posted by [PaoloR](#) on Fri, 17 Feb 2017 14:38:42 GMT

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OK, I see. Thanks a lot.

Just one additional information.

Do yo still suggest me to use R3BNeulandDigitizer for the Digi step?

Thanks

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