Reported by Vincenzo Forte

Legend:

Q= Question

A= Answer

R= Reply

Jeff Holmes - PTC_py-ORBIT - Release & Benchmarking

Q: Shinji: Why is PTC so important?

A: Jeff:It was a specific request we had few years ago.

R: Frank: We are making an effort for merging PTC with codes because it's affordable for us as tracker.

A: Jeff: PTC is an important and complete tracker, worldwide recognized. Anyway we are trying to implement our own symplectic integrator in pyOrbit....

R: Simone: Why ptc is so important for us? Because it is important for non-linearities and benchmarked for those (islands, etc.).

Ji Qyang - Impact - Benchmarking

Q: Simone: Comment ... the fact that he implemented the same tracking procedure of ptc makes believe what we have done with him for integer and 4th order. So it gives good confirmations.

Q - Jurgen- : For coasting beams there's an easy way to implement a s.c. matched distribution to avoid seeing some emittance growth... Did you implement or use in your code? There is like the waterbag one...

A: KV distribution for coasting beam, but for the waterbag i'm not sure.... need to check.

R: At least for coasting beam also for waterbag....

Q: jeff: Is the s.c. computation fast? There's filtering, so maybe there's smoothing?

A: n times square of the bandwith for the hermite polynomial = 9n

Q: Elena - For the benchmark of the PS, which model did you use? 3d poisson solver?

A: yes

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Valery KAPIN - Frozen SC Model in MADX-SC- Developments

Q: Qy: in your frozen sc model do you assume tr gaussian distr or 3d?

A: Transverse

Q: So it's just 2d.

R: Size changes?

R: Yes I changed

Q: Is it possible to distribute the space charge element not equidistantly in the ring: the distance must be always the same?

R: Distance is different. In code we just go through all elements and put a beam beam element according to certain criteria. Originally I wanted to use the PTC element (thick elements), but if you want to insert in arbitrary manner maybe you get some first order integrator. But it is still possible.

Q: Elias - What is the difference between MadX sc and micromap?

A: Is better to ask Giuliano...

R: Frank - he doesn't have a real cavity, so a fake one must be introduced.

R: Giuliano has to provide some things...

Q: Elena - What do you mean with fake synch oscillations?

A: It's a 4D tracking in MadX with pure synch. sinusoidal oscillation and according to position I modulated s.c. force, given by Gaussian. So the synch tune is always the same, in every beam beam element.

R: Elena – no cavities?

A: No cavities at all.

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James Amudson - Synergia-Release & Benchmarking

Q: James - In th PSB there are individual lattice functions... may it be for the bends ??

Q: Elena- the bends are R-bends in the PSB

R: Frank -in Mad there are only R bends with edges.

Q: Frank - Can we wrap this up with Giuliano?

A: Yes

Q: Simone - You advertised the possibility of using GPUs... a future release?

A: James - It will come... it will use nonlinear polynomial maps... workable and in production in the next months.

Q: Simone - Is the code depending on the hw?

A: We work on Nvidia. Intel is coming... It's our intention to support nvidia gpus.

Q: Simone - Differences in chromaticity... did u check the behaviour of focusing and orbit at the end of elements?

A: Yes, we got it.

F: The problem is that it didn't work out well without the closed orbit.

R: Simone - It look like the super-imposition of the straight fields of the quad and dipolar component...

Q: Jurgen - How did u manage to use GPUs in hw instruction and why not with compiler?

A: I started looking recently. When I work at the code it is clear to look at few particles and... to do it with the compiler I have some problems. Avoiding the use of the compiler makes things more clear to me.