

THE CYCLOTRON AS SEEN BY THE ACCELERATED PARTICLE

(Banquet Speech)

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Ladies and Gentlemen,

Most of you will know the cartoons "the cyclotron as seen by..." for instance the lab director - looking from his desk down on the labouring slaves, or the funding agency, that sees only trucks full of money going into the lab, and so on. They were presented, to my knowledge, at the dinner of one of the first cyclotron conferences. Now I will present to you the cyclotron and the cyclotron builders as seen by the really important guys, the stars of our business. This is not you by the way.

Some time ago a student showed me a newly designed cyclotron on one of these modern, fancy computer aided design systems. I was fascinated how one can show the machine from any angle or viewpoint and began to play with it. All of a sudden the cyclotron started to wobble and spin around with ever increasing speed until I saw only a blur, and finally the screen went blank. With the help of the student I figured out that I had shown:

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Then I realized that I had seen a world very strange to us and also that we should be much more concerned with this aspect. After all, if you think about it, whatever we build and calculate is always for the sake of the accelerated particles, to make them feel happy. But what I had seen was only a computer simulation, and of course I then wanted to find out what the real particles feel and think.

This is more easily said than done. But Berlin has been a centre of excellence in various fields, and during the days of the cold war it was so in spying. Still some excellent people of this profession are around without any really interesting goals to accomplish. So I could persuade one of them to build a very clever gadget for me with which I could listen to the talk of the particles. Unfortunately I could use it only once because someone superior of my friendly spy then realized that this was not only an amusing toy but of the utmost importance for Star Wars. Imagine power X listening to the particles of power Y while they rush

through space and tell each other: "In 50 seconds we smash satellite so and so." (You might even speculate that it was the invention of this device that led to the decline of the more fancy parts of the Star Wars' program.) Anyway the gadget was taken from me right away. Therefore the planned demonstration during your visit to HMI had to be cancelled, and I cannot offer you any solid proof for what I will tell you. But as this story is so fantastic, I am convinced from recent experience that it will soon be confirmed by many scientists around the world.

Here comes what I heard. The actors are the experienced Fluorina and the young, innocent Fluorine, and the story starts in the ion source of VICKSI.

Fa.: Finally we are out of this stuffy bottle, where we were squeezed so much that I already felt like fusing cold.

Fe.: Yes, here it is not so crowded although one still bumps into each other frequently. It is an exciting and hot atmosphere in here. I should get rid of my overcoat.

Fa.: I will try to get one of the electron servants that run around here to take some of our clothes. Finally he did it, but not very politely. He bumped right into me. Now I feel more free and can feel some of the magic forces surrounding us. Can you see the hole there? This is where we have to get through.

Fe.: Wow, I see that many of our friends do not manage and bump their heads into the wall. Anyway what comes behind the wall?

Fa.: Well you know these ion source people are not at all considerate. But things have improved already. Now and then, when they were too stupid, we went on strike or even rioted, burning down the whole place. This helped a bit. Good that you remind me about the plans for tonight. We are going to an orgy tonight and better leave some more of our clothes here right away.

Fe.: We will really have an orgy?

Fa.: Yes, don't be afraid.

You might not be in the mood yet, but you will be

so excited when we get there that you will love it. Careful now, we have to cross the narrow Wien bridge. On your right Magnetos wants to catch you, and on your left Electros lurks. Good that you kept close to me.
We have made it through here.

Fe.: Yes but I was very close to the brink. Ah, this is a beautiful flight now.

Fa.: God Van de Graaff is obviously in a good mood tonight.

Fe.: Why do you call him a god?

Fa.: Well the technicians think he is really the old unpredictable god Zeus of the ancient Greeks, who also used to throw thunderbolts now and then when he became angry. And then there is still little nowadays that they can do but pray and bring him offerings.

Fe.: What is this crowd of guys ahead? Will the orgy be there? I do not like their looks.

Fa.: Yes they are nasty and will try to grab at you. But just put on your most Coulomb repulsive face, and they will not do any harm.

Fe.: Thanks heaven, we are through.
I was really frightened with all these guys coming at me, and look they have torn all our clothes away.
God am I ashamed.

Fa.: Don't be ashamed.
This is only natural, after all.
The humans call what we went through the stripper. Besides we get to the entrance of a nudist colony soon and would be rejected if we had any clothes on.

Fe.: It is really nice to be so free now that I have overcome my scruples. Look at this beautiful, big merry go round. Can we take a ride?

Fa.: Sure we will, but it is a tricky business to jump on.
They don't care much about safety.

Fe.: What a fantastic ride.
I get into exuberant spirits. But hell it becomes bumpy now.

Fa.: Yes, this silly operator has nothing right, particularly the orbit centering is terrible. Damn it...

Here follow some really nasty remarks about cyclotron builders and operators that I better skip in front of this audience. I guess here I can go on.

Hang on, we might just make it.
It becomes smoother again. At some time I have to tell you about these strange cyclotron humans. Can you imagine, they believe that they control us completely. Now and then they get together and brag about it.

They call this the International Cyclotron Conference. Even the one nice custom they have at this occasion, namely a good dinner, they manage to spoil by having one more completely un-

necessary talk before the dessert.

Well after this remark I think I should stop. Fluorina and Fluorine anyway then jumped off the merry go round and sailed right into the arms of their lovers for a very hot fusion, and I had the decency to switch my gadget off. But I know an experimental physicist switched it right on again and perhaps he will tell the rest of the story some time.

Let me end with a word of caution. I am not completely sure anymore that I really listened to Fluorina and Fluorine. Perhaps, although I do not think so, this was all a fake arranged by my a bit too friendly spy friend in order to damage our scientific reputation. Anyway I should mention that this contribution has not been reviewed by the scientific advisory committee, and they cannot be blamed at all.