

## A Short Statement on the LHC Experiment

The international science organization CERN near Geneva performs the proton-collision experiment LHC – the biggest experiment of history. The collision phase is scheduled to start in mid July 2008.

Amongst all joyful looking-forward to the experiment, there are some pensive voices also in view of a new mathematical result being around. Can the miniblack holes hoped to arise in the experiment do any harm?

The central statements of CERN read:

1. Probably, there will no black holes arise.
2. If they do arise, they will evaporate immediately.
3. If they do not evaporate, they to the most part will fly away to leave the earth unscathed.
4. Those that remain in the earth will grow there only linearly – and hence very slowly.
5. In case the experiment has a positive outcome, black holes must arise also through the natural cosmic ray bombardment and thus should have devoured the earth and most celestial bodies long ago if they were dangerous.
6. Appropriate detecting devices have been installed.

The Tübingen and the Zurich group reply:

1. If string theory is valid, it is possible that little black holes will arise. String theory is being taken seriously by the majority of theoretical physicists. (The often considered point-like electrons are bound to be spatially extended – string-shaped – as a side effect of the Tübingen result, so that the black holes hoped to be produced by CERN would be nothing special in this respect.)
2. The evaporation hypothesis is based on the assumption of Hawking radiation which is accepted by many scientists but has not been empirically confirmed so far. The new mathematical result mentioned predicts that Hawking radiation is both infinitely weak and infinitely delayed. Therefore, black holes cannot evaporate but can do nothing but grow – in accord with an earlier result of Stephen Hawking's.
3. According to CERN, about every millionth black hole formed will not leave the earth – that is, one per ten days after collisions started. Even more will end up in the sun.
4. The “linear growth“ prediction is at variance with the well-known self-organization of astrophysically observed black holes (quasars, microquasars and possible smaller cousins). They all grow exponentially in the presence of matter – that is, do grow much faster than linearly. The same mechanism presumably also governs the miniblack holes planned by CERN into the earth or the sun.
5. The analogous cosmic-ray-produced superfast black holes are by virtue of their speeds innocuous for the earth and other celestial bodies – except for the most dense ones (neutron stars). The latter are protected by their quantum-generated superfluidity which allows passage without friction.
6. CERN did not install any special-purpose detectors in order to exclude with certainty the generation of nonevaporating black holes.

It is almost a bewitched situation: every carefully chosen CERN argument evaporates due to an independent reason so that a danger to life on earth cannot be ruled out. It is quite embarrassing to find yourself in the role of having to warn against an experiment that lets the heart of every physicist tic faster. All I can do is ask your help to be refuted in time – before irreversible facts have been created. An immediately called-in international conference appears to be the only way to reach this goal.

Address: Prof. Dr. Dr.h.c. Otto E. Rossler, Institute for Physical and Theoretical Chemistry,  
University of Tübingen, Auf der Morgenstelle 8, D-72076 Tübingen

Coauthors: Gabriele Schröter, Elisabeth Lehmann, Dieter Fröhlich. For J.O.R. (06/20/08)<sup>22</sup>