Editorial

Fracking and Geothermal boring can cause Earthquake

Several studies in the USA show that Fracking can cause earthquake. But also geothermal and gas boring as also the coalmining can occasionally lead to shockwave. The people who live in the northeast of US Federal State Ohio have never experienced an earthquake till March 2014. The earthquake researchers of Miami University in Oxford, Ohio have now confirmed the suspicion that the earthquake that once shook Ohio with an intensity of 3 in Richter scale caused by fracking.

They have two hypotheses as with fracking, so-called disturbances, consequently rupture in subsoil rock can meet with earth's motion. The final hypothesis as that the fracking process itself lead to stresses and strain underground. When the underground water opens through fissures, with that the natural gas can emerge, also the disturbances in the adjoining areas may meet with earth's motion. In March 2014 a previously unknown disturbance at a depth of 800 m distant for boring, the seismologists assume that the effect is traceable to a width of 1 km. The second hypothesis says that water gets into through leaks in rock in greater depth. The seismologist Brudzenski says, "Both sides of the disturbance are very acute and when water in between gets into, it works like a lubricant. Then the underground can meet with motion.

Further studies show that also the continental drift plays an important role. Certainly the earthquake-prone edges of the continental plates are many thousand kilometers far from Ohio but where the pressure on the plate ends is vertical, then a derangement occurs. This rearranges sensitively on the fracking high vibrations with fracking is normal. The seismologist is convinced that it cannot generate an earthquake of intensity 5 or 6 Richter scale in Ohio. What makes us more worried is that fracking waste water in the deep underground is pressed into – it causes obviously more problems than the fracking itself.

The people in the Federal State of Oklahoma make the experience. Anders as Ohio is the region tectonically active. However in between 1978 and 2008 only there happened two earthquakes per year of intensity 3 or more. The most violent in 2011 shook with an intensity of 5.6, the area Prague an inhabitant who was wounded now want to take legal steps with the Supreme Court, in her opinion, against the responsible energy undertaking concern.

The damages of the buildings are in between working day in the surrounding of the fracking plants. There the sewage water is pressed into in several kilometer depths far underneath the ground water pipes in order to obstruct every danger of water pollution. That is by far cheaper than the reworking of the wastewater. But the geological service of USA (USGS) and the State Oklahoma (OGS) hold the correlation of the sewage compression with earthquake unequivocal. The citizens are brought up in a state in which every sixth job directly or indirectly depends on oil and gas industry.

Also in Europe the earthquakes because of the using of substratum is not in scarcity as due to geothermal boring when however hot water is brought out of the earth and after the utilization of the heat it is pumped back into the earth. When the water quantity between extraction and bring ones back to its original site does not balance, while there is no hydraulic relation clarifies Ernst Huenges of geo-research centre, Potsdam. It can generate localized stresses and strains. As a consequence the earth trembles. Most of the quakes are too weak to be felt.

It appears totally different with classical mining so-called mining disasters due to coal extraction are day to day affair in industrial area and in Saarland in Germany. Because of this the bedrock at Saar is susceptible. In February 2008 due to a quake of the intensity of 4, a church along with others of saarwellingen was

damaged. It is valid as the strongest ever earthquake caused due to mining in Germany. But also in gasfield in Groningen in Holland where there was never before any earthquake but now very frequently vibrations are clearly perceptible. The strongest in August 2012 had the intensity 3.6. However more is discussed on geothermal tremor. We observe worldwide that new technologies are always very much critically considered as traditional, says Huenges. But he pleads for that to exactly exhibit, whether the subsoil remains under strain before boring is undertaken and not to overload the substrata. This was valid somewhat in oberrheinputs and in black forest area.

The geo-researchers of Potsdam demands that more considerate methods are developed which limit the number of tremors. With the use of the earth's heat is exactly with other use of subsoil bedrock, the risk assessment, in view of earthquakes is non-renunciable.

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In memory of our Parents

Swapna Mukherjee
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