

Plenary Talk

PV IV Tue 8:30 Audimax

Reduce, Reuse, 'Restore'. GHG Emissions from the Viewpoint of a Rock Physicist — ●FRANK R. SCHILLING — Technische Petrophysik (AGW), KIT, Karlsruhe, Germany

To reduce the anthropogenic contribution of greenhouse gases on global warming, different perspectives are debated. In this contribution, three major strategies and their potentials are discussed: To reach the goal set by COP21* in Paris (2015) by reducing GHG in the Earth's atmosphere, some 100 billion tonnes of CO₂ will have to be reduced, reused or (re)stored by the end of the century.

In view of this great challenge, different potentials will be discussed.

The focus will be the underground storage option for CO₂. What are the potentials, how safe is storage, what are possible trapping mechanisms (structural, chemical, physical) in the underground, and why caverns seem no option for long-term storage. Insights from the first European Onshore Project and recent developments will be used to address some hurdles that need to overcome in the next decades if some hundred million tons of GHG should be (re)stored underground safe and secure.

*COP21: United Nations Climate Change Conference 2015. The key result of the 196 parties was an agreement to set a goal of limiting global warming to 'well below 2 °C' compared to pre-industrial levels.