



## **The Newly Founded LIAG-XJU Joint Centre for Underground Coal Fire Research**

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Spontaneous self ignition of coal occurs wherever coal is mined, stored or processed. Thus started underground coal fires are an enormous hazard to the resource itself but also to the local and global environment. With the increased recognition of the contribution of such fires to the global warming problem by releasing uncontrolled considerable amounts of greenhouse gases the extinction of such fires becomes a crucial task for the future. In the big arid coal mining area of northwest PR China the necessity for protecting the still economically valuable coal resources and the environment has been realized since decades, leading to increased fire fighting activities, mostly by removing the burning coal, sealing the surface from oxygen and cooling the firezones with water. These activities need a thorough beforehand estimation of the needed resources (e.g water, filling material), costs and effort to be economically reasonable and sustainable. It is also important to estimate the current status of release of climate relevant gases and to assess the impact of the taken countermeasures.

Since the beginning of this century LIAG has been involved in the research on coal fires in Northern China and has developed a cooperation first with the Xinjiang Coal-Fire Fighting Bureau in Urumqi and later with the Xinjiang University. With the latter in 2017 the "XJU-LIAG Joint Centre for Underground Coal-Fire Research" was founded to provide a focal point for the research on detection, quantification, extinction and monitoring of underground coal-fires and related risk-areas.

These problems are first genuine tasks for applied geophysics. But the complexity of the problem requires also input from atmospheric science, remote sensing, geochemistry, engineering and other areas of research. We see this now starting centre as a chance to bring together specialists from all these areas to work jointly on the problems. Here we want to introduce the ideas that we are pursuing with the centre and to motivate interested colleagues to join the cooperation.