

# **Seminář ÚJF AV ČR**

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## **Modelling radiation effects at subcellular and cellular levels**

Mechanistic modelling integrates knowledge obtained in diverse fields of radiation physics, chemistry and biology. It helps interpret experimental results, extrapolate the data, and translate the results of radiation research to applications such as treatment planning in radiotherapy.

An overview will be given of the author's work in this field. First, a model will be presented of radiation-induced cell killing. Second, the PARTRAC tool will be reviewed that allows one to simulate particle tracks, induction of damage to DNA and chromatin, and its repair by the cell. Third, models will be presented of intercellular communication and its modulation by ionizing radiation, a hot topic in radiation biology with implications in radiation protection and radiotherapy. Ongoing and future modelling work will be discussed.

Seminář proběhne v anglickém jazyce ve čtvrtek 31. ledna 2019 v 10:00 v zasedací místnosti ÚJF AV ČR.