

# **Probing ultrafast dynamics in correlated materials with time-resolved resonant inelastic x-ray scattering**

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In the realm of strongly correlated materials with entangled degrees of freedom, accessing the ultrafast dynamics involving different energy scales in a single experiment, with momentum resolution, promises excellent scientific insight. With the recent advent of free-electron lasers (FEL), time-resolved resonant inelastic x-ray scattering (tr-RIXS) has emerged as a unique technique capable of unraveling such information. However, its complete realization has been hindered thus far by the limitations of available time and/or energy resolution. In this talk, I will present early results in this field and introduce Furka, the soft-x-ray experimental station for condensed matter of the SwissFEL. Its primary goal is to provide state-of-the-art tr-RIXS experiments in combination with a widely tunable pump laser radiation. Having successfully completed the installation phase, Furka is set to launch its user program in 2024.