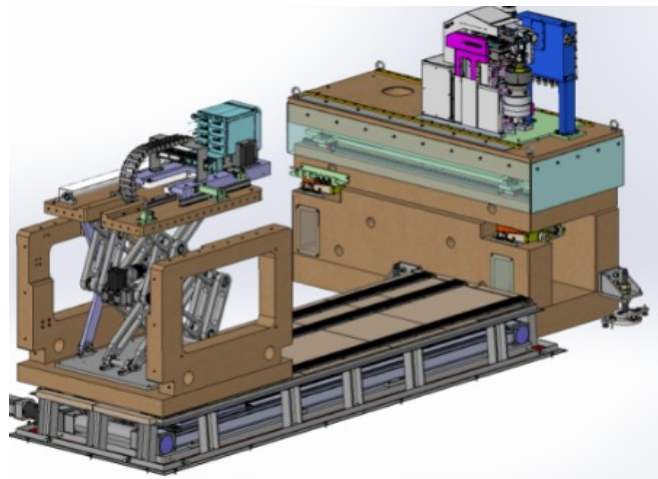


The upgrade of ID29 in a Serial Macromolecular Crystallography Beamlines for Time-resolved experiments

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The new ESRF Extremely Brilliant Source is paving the way to high energy fourth generation storage rings. As part of this major upgrade, the ESRF has promoted the construction of four flagship beamlines that are designed to fully exploit the characteristics of the new source. The upgrade of the previous MAD beamline ID29 into a serial crystallography beamlines for room temperature experiments. The optical layout is designed to delivered an extremely high flux at a submicron sample size in order to study microcrystals in a variable sample environment that could be adapted for different experiments, that includes injectors, tape drives, fixed target supports and microfluidic devices. A double chopper system produces a pulsed beam with exposure times in tens of



microseconds and it is synchronised with the ESRF storage ring, with the diffractometer, the new JungFrau 4M adjusting gain integrating detector (Figure 1) and a wide range laser source for pump-and-probe experiments. The beamline is also completed by a sample preparation laboratory that is accessible to the user community. In this talk we will present the beamline layout, the status of the project along with the initial commissioning results, the scientific scope and possible applications. The user programme for ID29 will be resumed in Autumn 2022 and the access mode for beamtimes for users with different familiarity with Serial crystallography experiments will be presented.