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## Development of Compton compact X ray sources

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Compact high flux x-ray sources can be obtained thanks to Laser-electron beam Compton scattering [1]. Some Compton x-ray sources and related R&D activities are presently under development. Starting from the Lyncean commercial fully operational small and compact electron ring [2] other projects aiming to reach higher x ray energy, higher flux or higher compactness have been launched worldwide, e.g.: Smartlight [3], STAR [4], ThomX [5] and TTX[6]. Whereas Smartlight, Star and TTX are based on LINAC technologies, ThomX is an electron ring of 50MeV-70MeV (a similar project TTX2 in under design study in China [7]). In this presentation we shall concentrate on two topics. The status and expected performances of the ThomX machine will first be given. Issues and limits of the related laser system will also be discussed. Second, a possible upgrade of the STAR project making use of an optimization of the recently demonstrated burst regime of optical resonators [8] will be described. Optimization of the burst mode will be explained together with an estimate of x ray flux for such LINAC based Compton machine.

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**Primary author:** Dr DUPRAZ, Kevin (CNRS / LAL)

**Co-authors:** Prof. SERAFINI, Luca (INFN-Milan and University of Milan); Prof. ZOMER, fabian (Université paris sud / CNRS)

**Presenter:** Dr DUPRAZ, Kevin (CNRS / LAL)

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