

## Marie-Emmanuelle Couprie, Synchrotron SOLEIL

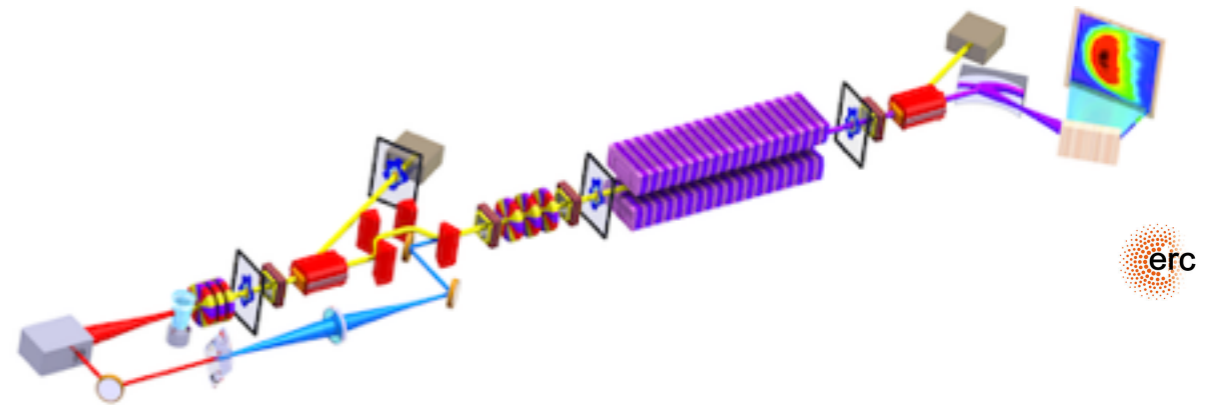
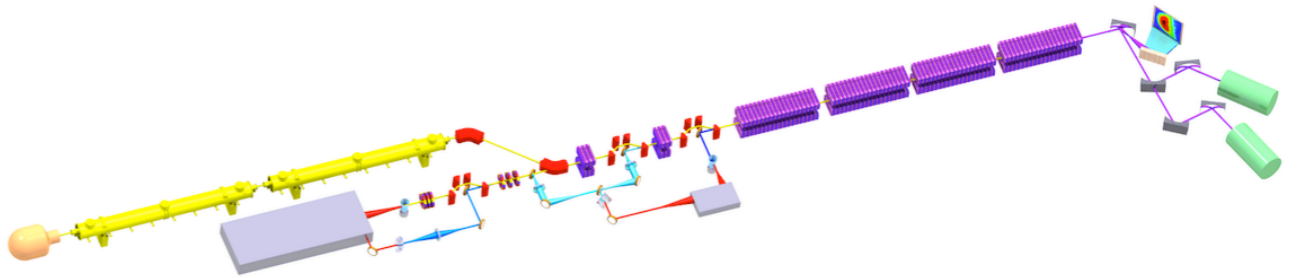
Presently (since 2006),

- head of the insertion device and magnet group at SOLEIL,
- head of the LUNEX5 project of advanced compact FEL

30 years of expertise of FEL and synchrotron radiation

Storage ring FEL dynamics, first UV user applications,  
two color pump probe user applications  
HHG seeding demo in collaboration with SCSS Test acc  
and SPARC

ERC advanced grant COXINEL



### Objectives :

- demonstrate an appropriate transport to the undulator
- demonstrate FEL amplification at **200 nm** and at shorter wavelength (40 nm)
- investigate and control (theory/experiments) FEL performance (seeding, polarisation...) in collaboration with ERC X Five (V. Malka)

M. E. Couprie (Synchrotron SOLEIL), G. Dattoli (ENEA)

### Partners

SOLEIL (24), ENEA (36), LOA (24), UHH (24), DESY, STFC, INFN, Lille Univ.

### Tasks

WP6.1 : Coordination and Communication (SOLEIL, ENEA)

WP6.2 : FEL baseline cases (SOLEIL, ENEA, CNRS-LOA, UHH, Lille Univ.)

WP6.3 : Undulator and technological development of equipments (SOLEIL, UHH, INFN, DESY, STFC)

WP6.4 : Towards scientific applications (SOLEIL, ENEA, STFC, DESY)

WP6.5 : Operational model (SOLEIL, DESY, INFN)

### Milestones

MS4 : Electron beam baseline parameter for FEL application (SOLEIL) M6, published on intranet

MS5 : State-of-the-art of short period undulator (SOLEIL) M7, Activity report

MS17 : Models and scaling laws for plasma FEL dynamics (SOLEIL) M 20, Activity report

### Deliverables

D6.1 : Report on state-of-the-art of short period undulators, Report, Public, M12

D6.2 : Models, scaling laws plasma FEL dynamics, Report, Public, M24

D6.3 : Diagnostic requirements and technical approaches, Report, Public, M24

D6.4 : Specific magnetic elements, Report, Public, M32

D6.5 : FEL Scientific user workshop, Report, Public, M24

### WP6 effort

CNRS-LOA (4) : 24 months

SOLEIL (8) : 24 months (not 30)

ENEA (11) : 36 months

UHH (14) : 24 months

Francesco Massimo started the 4/1/16, LPA calculations so far  
mid-April 2017

starting Jan. 2017