



FRIDA

Pisa General Meeting - 27-28 Ottobre 2022



FRIDA overview



- 100 researchers/7 tech, ~36 FTE (total) → w.r.t last year: Bari joined on dosimetry task.
 - All the activities ongoing in the 4 WP are proceeding as planned (milestones & deliverables)
- Significant presence in the international context:
 - Conferences: ECMP (Dublin), FRPT (Barcellona), ERRS (Catania)...
 - UHDPulse [<http://uhdpulse-empir.eu/>] will be renewed and INFN is one of the few institutions that made it in the next consortium..
- Spreading knowledge
 - Significant contribution to the AIFM Caldirola school on FLASH therapy



Meeting overview



- We'll start with the **status of the facilities**: it's crucial, as FLASH eagerly needs exp. input and not just speculations..
- Then we will review the status of the different WPs: the idea is to have **roundtables** at the end of each block so that we can discuss '**cross-WPs' matter**. This is really important: the real force of FRIDA is the capability of putting together all the flash aspects.. E.g. ... the accelerator builders need the feedback from planners & radbio experts; to plan experiments we need to know which beams are available... the beam delivery and control is a matter of interest both for detector developers and accelerator builders...
- Short presentations: time for discussion!





Budget overview

- 2022:
 - The latest requests were approved by CSN5, thanks to the significant amount of 'leftovers' that were available in Sept.
- 2023:
 - ~ all the requests have been approved / discussion with referee was fruitful and always with positive outcome
 - the 'cuts' on the LNS & RM1 requests on the VHEE linac have been agreed with the referees and are related to the rescheduling of the real expenses (e.g. the linac accelerating section required 120 k€ that have been divided as 90k€ 2023 + 30 k€ 2024)
 - It has been made really clear that 'money' can be requested any time if there's a real need: cannot ask for 'new' money if there are still k€ around. We need to coordinate so to avoid that additional requests are denied because of unspent funds
- Regarding manpower: all the requests have been officially 'granted'.. But there are still a lot of uncertainties about which contracts will really start and when.

Finally, a warm thanks to A. Lonardo and the computing commission for finding the resources for the FRIDA computing activities!

WP1

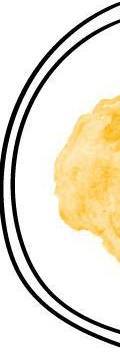


- 2022:
 - Several measurements campaigns have already been scheduled.. Other will happen at the beginning of 2023..
- 2023:
 - Report on **radchem extension to heterogeneous stage**.
 - Report on **tumor cells and retina-pigment cell** studies. Report on **explanted mouse retina experiments**.
 - Report on **cell survival/DNA repair and redox status** under FLASH conditions. Collecting FLASH irradiated medium and pellets for future immunological profiling and RNAseq.
 - Report on the effects of **conv vs FLASH irradiation on a 3D collagen scaffold**. Data collected with 2nd harmonic / two photon microscopy.
 - WP1 - WP3: Dosimetric characterisation of To LINAC and TIFPA FLASH beam.

WP2



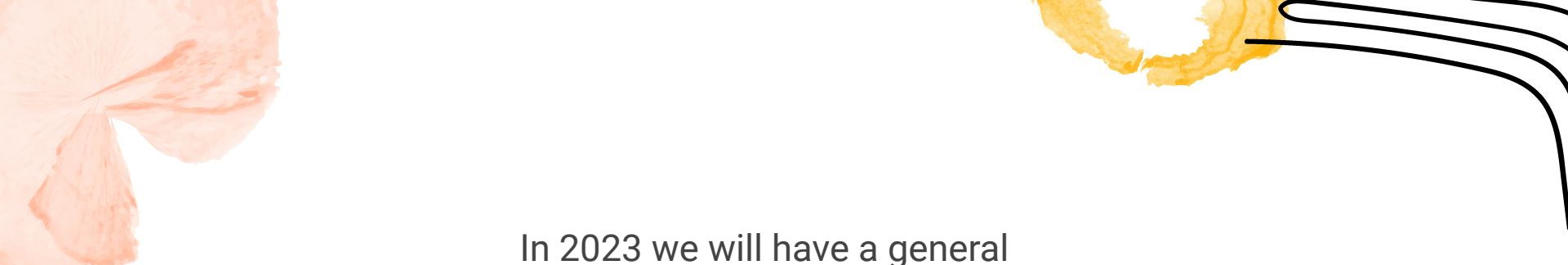
- 2023:
 - VHEE - RF. **Manufacturing of high gradient accelerator prototype and pulse compressor prototype.**
 - Laser drive FLASH. Finalise design of coil targets to be used at QUB and ELI. Acquisition of targets from RAL. **Start experimental test in laser facilities.**
 - Laser driven VHEE. modelling of dosimetric setup with MC simulations (**aim is Pencil beams with 1Gy/shot dose**)
 - **Design** of a geometrical, mechanical and thermal configuration **of tungsten anode for ultra high rate bremsstrahlung production**



WP3 & WP4



- WP3 2023:
 - Production and test on FLASH beams of Beam Monitors and Dosimeters prototypes.
- WP4 2023:
 - 30 lug 2023 : implementation of scorers capable of recording dose deposition and radiation quality relevant on the relevant timescales
 - 30 lug 2023 : IORT evaluation using static DMF
 - 31 dic 2023: evaluation of DoseRate maps for interest clinical cases identified in the first project step, treatment plan optimisation with static DMF



In 2023 we will have a general meeting 'in presence' .. We need to decide where :) .. suggestions are welcomed (Cuba? Hawaii?...)

Visto che ci sono tanti che hanno cose nuove da mostrare direi che NON e' utile lasciare loro lo spazio.

M. Marafini

