MOCRAF Workshop

7th workshop dedicated to
MOtion ContRol Applications in large Facilities

Brian Nutter (DLS), Yves-Marie Abiven (SOLEIL) ,
Guifre Cuni (ALBA), Nicolas Janvier (ESRF),
Nicola Coppola(euXFEL), Christer Engblom (SOLEIL),
Xavier Serra (ALBA)

In memory of our friend
Nicolas JANVIER

14-22 October 2021

Hosted by :

→66 attendees

→14 countries

→26 Institutes

→ 2 trading companies

→https://www.google.com/maps/d/edit?hl=en&mid=1IJHQnihWT_Sk_-aLoR_gkVmAY2g&ll=5.10899801646877%2C0&z=2

- Experiences in Motion Control

Technical solutions in software and low level hardware: Kinematic transforms, Complex trajectories, Protection including collision avoidance, Multi-axes and Multi-controller synchronization, Embedded and/or hosted motion features, Closed-loop control system with different feedback sources, Vibration Control.

- Experiences in Robotics

Industrial Robot arms, Collaborative robot, Implementations, experience under X-Rays, integration into control systems (Tango, EPICS), maintenance.

- Experiences in Metrology

Stage evaluations, estimations, simulations, characterization methods.

- Experiences in Modeling

Tools for modelling and improving motion control and mechanical systems. (Matlab, Simulink, Modelica...)

- Application experiences

Challenges: submicron positioning complex sample stages environment, continuous & synchronous motion control & data detector's acquisition

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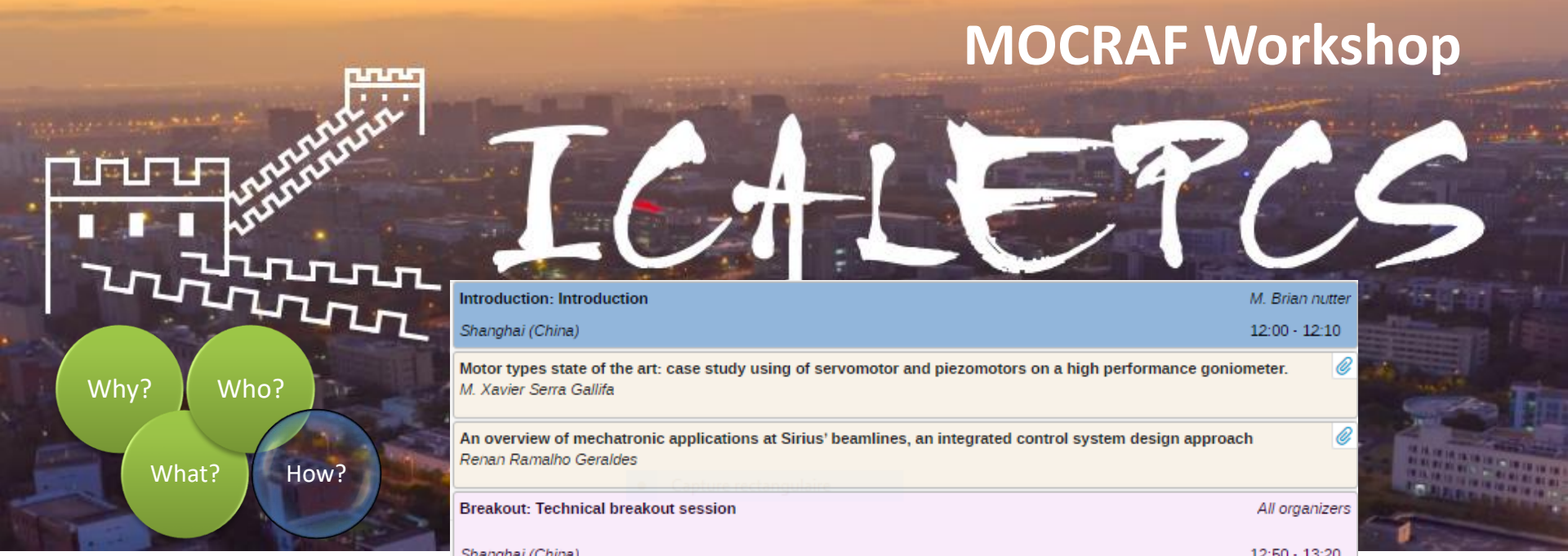

Introduction: Introduction	*M. Brian nutter*	
Shanghai (China)	12:00 - 12:10	
Motor types state of the art: case study using of servomotor and piezomotors on a high performance goniometer.		
M. Xavier Serra Gallifa		
An overview of mechatronic applications at Sirius' beamlines, an integrated control system design approach		
Renan Ramalho Geraldes		
Breakout: Technical breakout session	*All organizers*	
Shanghai (China)	12:50 - 13:20	
Break		
Shanghai (China)	13:20 - 13:35	
Robotic for pick and place at SOLEIL	*Mme Laura Muñoz*	
Shanghai (China)	13:35 - 13:55	
RAHDD- detector positioning robot	*Brian Nutter*	
Shanghai (China)	13:55 - 14:15	
Breakout: Technical discussion / Shared experience	*All Organizers*	
Shanghai (China)	14:15 - 14:45	
Beckoff: MAGLEV technologie	*Johannes Beckhoff*	
Shanghai (China)	14:45 - 15:15	
Collision Avoidance Systems In SOLEIL	*M. Christer Engblom*	
Shanghai (China)	15:15 - 15:35	
Conclusion	*M. Brian Nutter*	
Shanghai (China)	15:35 - 15:50	

https://indico.synchrotron-soleil.fr/event/34/timetable/#20211015

- Experience shared:
  - New motion actuator experiences from high-performance servo- and piezo- motors to magnetic levitation actuators
  - Experience in developing mechatronic approaches from error budgeting to mechanical and control design. Global approach essential when pushing the boundaries of system performance and stability
  - More robotic arms are used in beamline and process automation.
  - Collision avoidance system with ongoing development including dynamic approach (using 3d models), or using vision based system (edge detection)

- Thank you
  - ICALEPCS committee and organizers
    - MOCRAF Organizers
      - All attendees

Keep in touch,

Looking forward to see you in the next ICALEPCS !