

5th ENES HPC Workshop on HPC for High-Resolution Climate and Weather Modelling

European & International
Exascale Ecosystems

Data Centres support for Weather
and Climate Models and Workflows

Very High-Resolution Modelling
and HPC Challenges

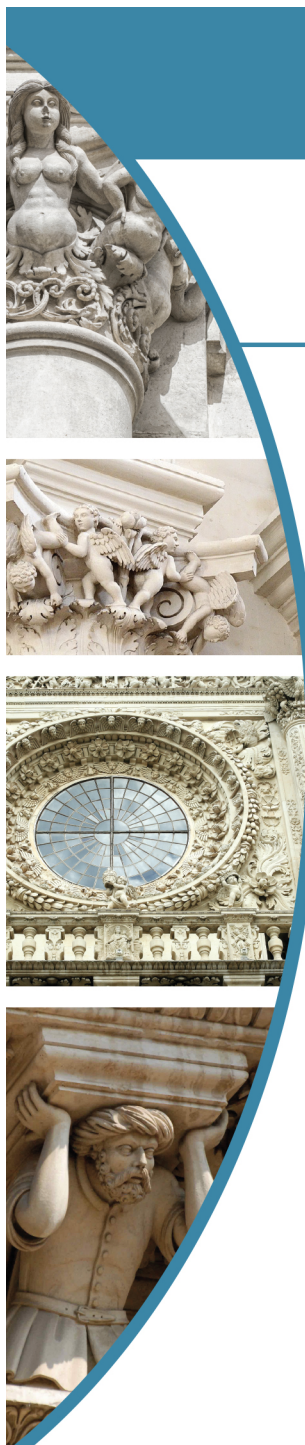
European Strategies on HPC

Tools and Components

ESiWACE Coordinator

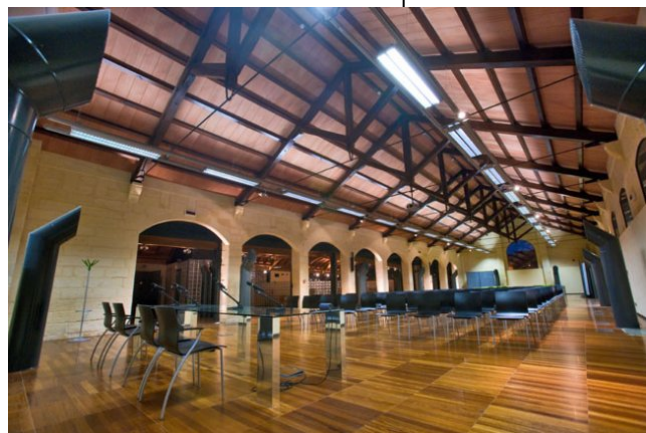
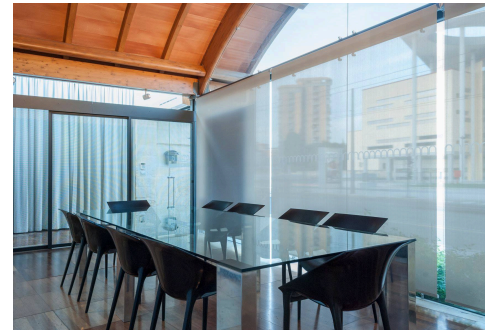


Hosted by



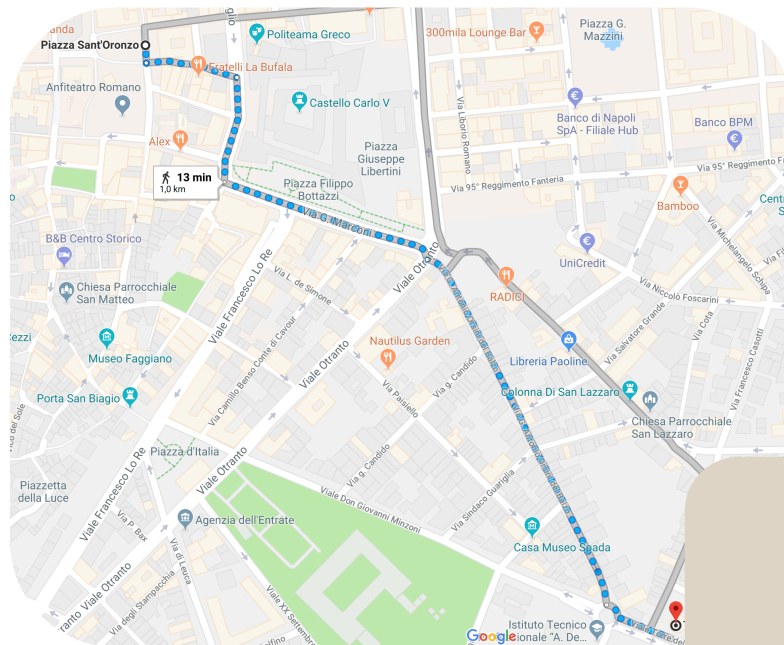
Cantelmo
officine

Entrance
(via Corte dei Mesagnesi)



Entrance
(viale De Pietro)

The main downtown square



The restaurant is actually pretty close to the centre
it only takes about 10 mins to walk there!



esiwace
CENTRE OF EXCELLENCE IN SIMULATION OF WEATHER
AND CLIMATE IN EUROPE



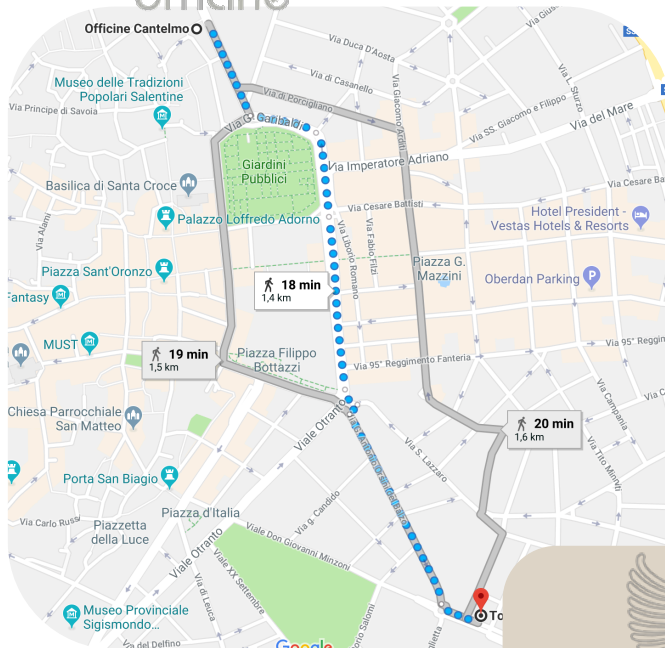
Horizon 2020
European Union funding
for Research & Innovation



enes
EUROPEAN NETWORK
FOR EARTH SYSTEM MODELLING

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Viale Torre del Parco n.1



Sant'Oronzo square



Santa Croce Basilica



Roman Amphitheatre



Cathedral

5th ENES HPC Workshop
on "HPC for high-resolution climate and weather modelling"
organized by ESIWACE

Lecce, "Officine Cantelmo", Viale M. De Pietro, 12
May 17-18 2018

Thursday, May 17th			11:50-16:10		
08:30-09:00	Registration & Welcome coffee		Session 2 – (Very) high-resolution models & HPC challenges	Chairs: Biercamp/Budich	
09:00-09:10	Welcome session		11:50-12:10	Preliminary evaluation of systematic biases in a FV3-powered global cloud-permitting mode	S. J. Lin (NOAA, US)
09:00-09:05	Welcome	G. Aloisio (CMCC, IT)	12:10-12:30	Code optimizations and the accumulated impact on scientific throughput of an HPC center	J. Dennis (NCAR, US)
09:05-09:10	Workshop introduction and opening remarks		12:30-13:30 Lunch break		
09:10-11:50	Session 1 – European & international exascale ecosystems		Chairs: Aloisio/Navarra		
09:10-09:40	Challenges of Exascale Computing, Redux	P. Messina (ANL, US)	13:30-13:50	Challenges of NICAM toward the exascale era	H. Yashiro (RIKEN, JP)
09:40-10:10	The EuroHPC declaration	S. Bassini (CINECA, IT)	13:50-14:10	Redesigning CAM-SE on Sunway TaihuLight for Peta-Scale Performance	L. Gan (Tsinghua University, CN)
10:10-10:25	EXDCI – Supporting the European HPC ecosystem towards the Exascale endeavour	S. Bogaerts (PRACE, AISBL)	14:10-14:30	Near-global climate simulation at 1km resolution with COSMO 5.0	C. Osuna (MeteoSwiss, CH)
10:25-10:40	ESiWACE - Supporting very high resolution climate simulations in Europe	J. Biercamp (DKRZ, DE)	14:30-14:50	Tropical Cyclones and resolution sensitivity in HighResMIP GCMs	P. L. Vidale (NCAS, UK)
10:40-11:05	Coffee break		14:50-15:10 Coffee break		
11:05-11:20	POP CoE: understanding applications and how to prepare for exascale	J. Labarta (BSC, SP)	15:10-15:30	The ESIWACE Demonstrators: Scalability, Performance Prediction, Evaluation	P. Neumann (DKRZ, DE)
11:20-11:35	The EoCoE Centre of Excellence	E. Audit (CEA, FR)	15:30-15:50	DYNAMICO, the IPSL icosahedral dynamical core: status and outlook	T. Dubos (LMD/IPSL, FR)
11:35-11:50	EuroEXA: a co-design project for exascale computing	G. Riley (Univ. of Manchester, UK)	15:50-16:10	Towards HPC System Throughput Optimization	J. Durachta (NOAA, US)
			16:10-17:00	General discussion & end of day 1	Chair: Bauer
			19:30	Workshop dinner at "Dimora storica Torre del Parco 1419"	

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Friday, May 18th		
09:00-14:50	Session 3 – Tools & Components	Chairs: Valcke/Serradell
09:00-09:30	DSL toolchains and performance optimizations for weather and climate codes	C. Osuna (MeteoSwiss, CH)
09:30-10:00	Atlas, a library for numerical weather prediction and climate modelling	W. Deconinck (ECMWF, UK)
10:00-10:30	PSyclone: a domain-specific compiler for finite element/difference Earth-system modelling codes	R. Ford & A. Porter (STFC, UK)
10:30-10:50	<i>Coffee break</i>	
10:50-11:20	Efficiency and scalability of numerical algorithms - from ESCAPE to ESCAPE-2	P. Bauer (ECMWF, UK)
11:20-11:50	CLAW Compiler: Abstractions for Weather and Climate Models	V. Clément (MeteoSwiss, CH)
11:50-12:20	ESMF Strategies to Address HPC Challenges	R. Montuoro (NOAA/CIRES, US)
12:20-13:20	<i>Lunch break</i>	
13:20-13:50	Output whole CMIP6 data through the news XIOS parallel workflow functionalities	Y. Meurdesoif (IPSL, FR)
13:50-14:20	Latest developments on the OASIS3-MCT coupler for improved performance	S. Valcke (CERFACS, FR)
14:20-14:50	XIOS integration for OpenIFS: Computational Aspects and Performance Evaluation	M. Acosta (BSC, SP)
14:50-16:00	Session 4 - Panel Discussion (on data centre support for weather and climate models and workflows)	Chair: Lawrence
	Few minutes of presentation followed by questions and open discussion	CINECA, BSC, GENCI, JRC
16:00-16:20	<i>Coffee break</i>	
16:20-17:30	Session 5 – European strategies on HPC	Chairs: Jousaume/André
16:20-17:00	An update on the ETP4HPC and Extreme Scale Demonstrators	T. Eickermann (Juelich & ETP4HPC)
17:00-17:30	Summary and further actions	Chair: Biercamp
17:30	End of the workshop	

NB: time for speakers includes 5 minutes for questions