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# Latin American Introductory School on Parallel Programming and Parallel Architecture for High Performance Computing | (smr 3187)

## Monday 12 February 2018

### WEEK 1: MONDAY - DAY 1 - (09:30-18:30)

time	title	presenter
09:30	Registration of participants and administrative issues	
10:30	Introduction to HPC	IVAN GIROTTO
11:30	Coffee break	
12:00	Foundation of Modern Computer Architecture	IVAN GIROTTO
13:00	Lunch break	
14:00	Measuring Hardware Performance	IVAN GIROTTO
16:00	Coffee break	
16:30	Floating point Math (including Lab)	RICHARD BERGER

# Tuesday 13 February 2018

## **WEEK 1: TUESDAY - DAY 2 - (09:30-18:30)**

time	title	presenter
09:30	From Source Code to Executable	IVAN GIROTTTO
11:00	Coffee break	
11:30	Building SW Packages Overview: make & cmake	J. MANUEL SOLANO ALTAMIRANO
13:00	Lunch break	
14:00	Lab-session: Practicing on Code Compilation	J. MANUEL SOLANO ALTAMIRANO
16:00	Coffee break	
16:30	Lab-session: Compiler Options and Mixing Languages	IVAN GIROTTTO

## Wednesday 14 February 2018

### **WEEK 1: WEDNESDAY - DAY 3 - (09:30-18:30)**

time	title	presenter
09:30	Basic Principles of Parallelism	GAVIN PRINGLE
11:00	Coffee break	
11:30	Introduction to OpenMP	RICHARD BERGER
13:00	Lunch break	
14:00	Lab-session: OpenMP Programming	RICHARD BERGER
16:00	Coffee break	
16:30	Lab-session: OpenMP Programming	RICHARD BERGER

# Thursday 15 February 2018

## **WEEK 1: THURSDAY - DAY 4 - (09:30-18:30)**

time	title	presenter
09:30	Practical MPI	GAVIN PRINGLE
11:00	Coffee break	
11:30	Practical MPI	GAVIN PRINGLE
13:00	Lunch break	
14:00	Lab-session: Practicing MPI	GAVIN PRINGLE
16:00	Coffee break	
16:30	Lab-session: Practicing MPI	GAVIN PRINGLE

## Friday 16 February 2018

### **WEEK 1: FRIDAY - DAY 5 - (09:30-18:30)**

time	title	presenter
09:30	Overview of Common Strategies for Parallelization	IVAN GIROTTO
11:00	Coffee break	
11:30	Tasking Programming Model	JIMMY AGUILAR MENA
13:00	Lunch break	
14:00	Lab-session: Practicing MPI	IVAN GIROTTO
16:00	Coffee break	
16:30	Lab-session: Tasking Programming Model	JIMMY AGUILAR MENA

# Monday 19 February 2018

## WEEK 2: MONDAY - DAY 6 - (09:30-18:30)

time	title	presenter
09:30	Best Practise of Parallel SW Development: LAMMPS	RICHARD BERGER
11:00	Coffee break	
11:30	Parallelising Wave Front Simulations	GAVIN PRINGLE
12:15	Exponential integrators using matrix functions: Krylov subspace methods and Chebyshev expansion — The HPC approach	MARLON BRENES NAVARRO
13:00	Project Presentation and discussion	
13:30	Outside together lunch @ Instituto Nacional de Investigaciones Nucleares (ININ)	
16:30	Working on Projects	



## Tuesday 20 February 2018

### **WEEK 2: TUESDAY - DAY 7 - (09:30-18:30)**

time	title	presenter
09:30	HPC Best Practice: Facility Deployment, Managment and Administration	RICHARD BERGER
11:00	Coffee break	
11:30	Foundations of Parallel I/O	GAVIN PRINGLE
12:15	Portable data format by example: netcdf	WILLIAM OQUENDO PATIÑO
13:00	Lunch break	
14:00	Working on Projects	
16:00	Coffee break	
16:30	Working on Projects	

## Wednesday 21 February 2018

### **WEEK 2: WEDNESDAY - DAY 8 - (09:30-18:30)**

time	title	presenter
09:30	Sparse Matrix Computations with common Libraries for HPC	MARLON BRENES NAVARRO
11:00	Coffee break	
11:30	Parallel FFTs and the FFTW library	GAVIN PRINGLE
13:00	Lunch break	
14:00	Working on Projects	
16:00	Coffee break	
16:30	Working on Projects	

## Thursday 22 February 2018

### **WEEK 2: THURSDAY - DAY 9 - (09:30-18:30)**

time	title	presenter
09:30	Distributed computing in deal.II, parallel solvers and preconditioners	WOLFGANG BANGERTH
11:00	Coffee break	
11:30	Overview on GPU Accelerators and Programming Paradigms	IVAN GIROTTO
12:15	Future of Programming Paradigms	JIMMY AGUILAR MENA
13:00	Lunch break	
14:00	Working on Projects	
16:00	Coffee break	
16:30	Working on Projects	

## Friday 23 February 2018

### **WEEK 2: FRIDAY - DAY10 - (09:30-13:10)**

time	title	presenter
09:30	Modern Scientific SW Development: how to and best practises from the development of the dealII, including future perspectives	WOLFGANG BANGERTH
11:00	Coffee break	
11:30	Projects Presentation	
13:00	Closing remarks	