



CUI-IWR Joint Workshop on



Numerical Solutions of Partial Differential Equations (DUNE/PDELab)

October 1-5, 2018

Schedule, Version September 19, 2018

Day 1(Monday, Oct 1, 2018)

Hours	Topics
08:30 – 09:30	Registration: Seminar Hall EE Department(Academic block-I)
09:30 – 10:15 Venue: Seminar Hall EE Department (Academic block-I)	1. Prof. Dr. Shamsul Qamar, Welcome Speech HOD Math 2. Prof. Dr. Arshad Saleem Bhatti, Dean Sciences, CUI 3. Prof. Dr. Peter Bastian, Dean Math & Computer Sciences, Uni. Heidelberg 4. Ms. Inge Iqbal, Director, DAAD, Islamabad
10:15 – 10:45	<i>Refreshment</i>
10:45 – 11:45 Venue: Seminar Hall EE Department	Introduction to DUNE framework Prof. Peter Bastian
11:55 – 13:00 Venue: CS-CL# (Academic Block-II)	Lab: C++ Refresher and Basic Linux Commands Dr. Shamsul Islam, Dr. Junaid Anjum,
13:00 – 14:30	<i>Lunch Break</i>
14:30 – 15:30	C++ Templates, Traits and Policies Dr. Ole Klein
16:00 – 16:30	<i>Tea/Coffee Break</i>
16:30 – 18:00 EE-CL#1	Lab: C++ Templates, Traits and Policies Dr. Ole Klein, Linus Seelinger

Day 2(Tuesday, Oct 2, 2018)

Hours	Topics
09:00 – 9:45 SSBC-First Floor Hall	Numerical Solution Techniques for Solving Partial Differential Equations Prof. Dr. Shamsul Qamar
9:50 – 10:20 SSBC-First Floor Hall	Functional Space/ Theoretical Foundation of Finite Element Method Dr. Tayyab Nawaz
10:20- 11:00 SSBC-First Floor Hall	Iterative Solvers for Linear and Nonlinear Systems Dr. Abdullah Shah
11:00 – 11:30	<i>Tea/Coffee Break</i>

11:30 – 13:00 SSBC-First Floor Hall	Conforming Finite Element Method for Linear and Nonlinear Poisson Equation Prof. Peter Bastian
13:00 – 14:30	<i>Lunch Break</i>
14:30 – 15:30 Venue: CS-CL# (Academic Block-II)	Lab: Dune implementation by running examples/ change parameters in the input file /mesh generation and post-processing using Paraview Linus Seelinger
15:30 – 16:30	DUNE Grid Interface René Heß
16:30 – 18:30	Break/Refresh
18:30 – 20:30	<i>Conference Dinner / Intent of Cooperation (CUI-IWR) Signing Ceremony</i>

Day 3(Wednesday, Oct 3, 2018)

Hours	Topics
09:00 – 11:00 SSBC-First Floor Hall	Tutorial00 Code Example Prof. Peter Bastian
11:00 – 11:30	<i>Tea/Coffee Break</i>
11:30 – 13:00 SSBC-First Floor Hall	Adaptive FEM for Elliptic PDE's/Tutorial 05 Dr. Ole Klein
13:00 – 14:30	<i>Lunch Break</i>
14:30 – 15:30 EE-CL#1	Lab: DUNE Grid Interface and Nonlinear Poisson René Heß
15:30 – 16:00	<i>Tea/Coffee Break</i>
16:00: 17:00 EE-CL#1	Lab: Adaptive grid computations Dr. Ole Klein, Linus Seelinger

Day 4(Thursday, Oct 4, 2018)

Hours	Topics
09:00 – 10:00 SSBC-First Floor Hall	Review of Time discretization schemes for ordinary differential equations, Dr. Muhammad Sabir
10:00 – 11:00 SSBC-First Floor Hall	Solving Parabolic Partial Differential Equations/ Tutorial 03 Prof. Dr. Peter Bastian
11:00 – 11:30	<i>Tea/Coffee Break</i>
11:30 – 13:00 EE-CL#1	Lab: Parabolic PDEs René Heß
13:00 – 14:30	<i>Lunch Break</i>
14:30 – 15:30 SSBC-First Floor Hall	Finite Volume Method for nonlinear Poisson Equation Prof. Peter Bastian
15:30 – 16:00	<i>Tea/Coffee Break</i>
16:00 – 17:30 EE-CL#1	Discussion/ Review PDELab(In Lab) Ask participants on Monday to prepare 2...3 slides

Day 5(Friday Oct 5, 2018)

Hours	Topics
09:00 – 11:00 SSBC-First Floor Hall	Solving Hyperbolic PDEs / Tutorial 04 and Tutorial 07 Linus Seelinger
11:00 – 11:30	<i>Tea/Coffee Break</i>
11:30 – 13:00 EE-CL#1	Lab Linus Seelinger, Dr. Ole Klein
13:00 – 14:30	<i>Lunch Break</i>
14:30 – 15:00 <i>Seminar Hall EE Department (Academic block-I)</i>	Interactive Session/Participants feedback Study and Life in Heidelberg university
15:30 – 16:30 <i>Seminar Hall EE Department (Academic block-I)</i>	Certificate Distribution/Closing Ceremony <ul style="list-style-type: none">• Dr. Abdullah Shah• Prof. Dr. Moiz ud Din Khan, Chairman Mathematics• Prof. Dr. Peter Bastian,• Chief Guest (TBC)
16:30 – 17:00	<i>Refreshment</i>

Day 6(Friday Oct 5, 2018)

Hiking Margala Hills Trail 3: (Dr. Tanvir Akbar Kiyani: Organizer)



The most famous and old hiking track of Islamabad. It starts from the Margalla road sector F-6. The trail is exhausting to some extent, due to steep hills. The course will lead you to which goes up to the Viewpoint and is about a 30 - 50 min. track. After the Viewpoint you can continue on for another easy-going 45 - 60 mins and reach the Pir Sohawa, where you can choose from 2 restaurants for food, The Monal and La Montana.