



# PALM seminar - CUHK 2013

## Introduction



technical information



general lecture / theory / numerics



explaining exercises



exercises

schedule 26.8.2013

time	Wednesday, 25/09	Thursday, 26/09	Friday, 27/09	Saturday, 28/09	Sunday, 29/09
9 - 10	<b>Seminar introduction</b>  <b>Fundamentals of large eddy simulation</b>	<b>Numerics and boundary conditions</b> timestep- / advection-methods, pressure-solver, grid	<b>PALM - program structure</b> flow chart, important variables, machine dependencies	<b>Using Topography</b> realization of topography, setup requirements for flow around buildings and for comparison with wind tunnel data	<b>PALM - user-defined code</b> basics, interfaces
10 - 11	basic equations, subgrid-scale models	<b>PALM - program control by physical parameters / model output</b> parameter file, important output files	<b>Parallelization</b> basics, domain decomposition, MPI communication, MPI-calls in PALM	<b>PALM - application</b> posing an exercise (flow around single building)	<b>PALM - how to add user-defined code</b> posing an exercise (flow over leads)
11 - 12		<b>PALM - how to carry out runs with mrun</b> way of operating, file management, configuration file	<b>PALM - application</b> posing an exercise (neutrally stratified boundary layer)	<b>PALM – application by users</b> flow around single building	<b>PALM – application by users</b> developing and testing user-defined code
lunch break					
13 - 14	<b>PALM - Overview</b>	<b>PALM - how to carry out runs with mrun</b> data analysis, netCDF, graphics, posing an exercise (CBL)	<b>PALM – application by users</b> neutrally stratified boundary layer		
14 - 15	<b>PALM - installation using mbuild</b> download, configuration, make, interactive test run	<b>PALM – application by users</b> convection between plates		<b>Discussion of results / problems</b>	<b>Discussion of results / problems</b>
15 - 16	<b>PALM - installation</b>		<b>Discussion of results / problems</b>	<b>Using non-cyclic boundary conditions</b> motivation, setup requirements for non-cyclic boundary conditions, realization of turbulent inflow	<b>PALM - how to carry out restart runs</b> steering by parameter file and mrun
16 - 17	<b>Discussion of results / problems</b>	<b>Discussion of results / problems</b>	<b>PALM - debugging</b> basics, examples	<b>Embedded Lagrangian particle model</b> theory, application examples, setup requirements, data output and analysis	<b>Final remarks</b>  <b>Closing of seminar</b>