

PhD Program Public Health

Course Title:

Spatial statistics for epidemiologists

Description	Spatial variation in health outcomes is a common feature in epidemiology. This course discusses state-of-the-art statistical tools for the analysis of spatial health data.
Objectives	To understand and apply the main statistical techniques for spatial data analysis in epidemiology and public health
Dates	20.-22. October 2008
Eligibility	Good knowledge of Biostatistics, including regression. Programming knowledge in R would be beneficial.
Course content	<p>Simple methods</p> <hr/> <p>Global and local Autocorrelation Spatial Kernel Smoothing Tests for spatial randomness</p> <p>Point process methods in spatial epidemiology</p> <hr/> <p>Spatial case-control design Spatial clustering Spatial variation in risk Point source models Stratification and matching</p> <p>Methods for area-level count data</p> <hr/> <p>Poisson regression Overdispersion The Clayton & Kaldor model: Shrinkage by empirical Bayes The Besag, York and Mollie model: Full Bayesian smoothing Ecological regression: Adjustment for area-level covariates</p> <p>Advanced techniques</p> <hr/> <p>Spatial analysis of several health outcomes Geoaddivitive regression Geostatistics Spatial survival</p>
Student assessment	Successful participation in computer lab exercises.
Credits	1 ECTS
Facilitator	Prof. Leonhard Held, University of Zürich
Location	Institute of Social and Preventive Medicine, University of Zurich, Hirschengraben 84, 8001 Zurich
Course fee	300.--
Registration	sinikka.kohler@ifspm.uzh.ch
DEADLINE	PLEASE REGISTER BY FRIDAY 18 JANUARY 2008

PhD Program Direction:

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