Numerical solution of saddle point problems with applications to Optimal Transport

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This course will cover state-of-the-art methods for the solution of large-scale saddle point problems. Such problems arise frequently throughout computational science and engineering, for example in computational fluid mechanics and in optimization. The main emphasis of the course will be the design and analysis of preconditioners for the iterative solution of saddle point systems via Krylov subspace methods. Part of the course will be devoted to the numerical solution of problems arising in Optimal Transport.