

## Graph, cuts and PDE minimization for image processing

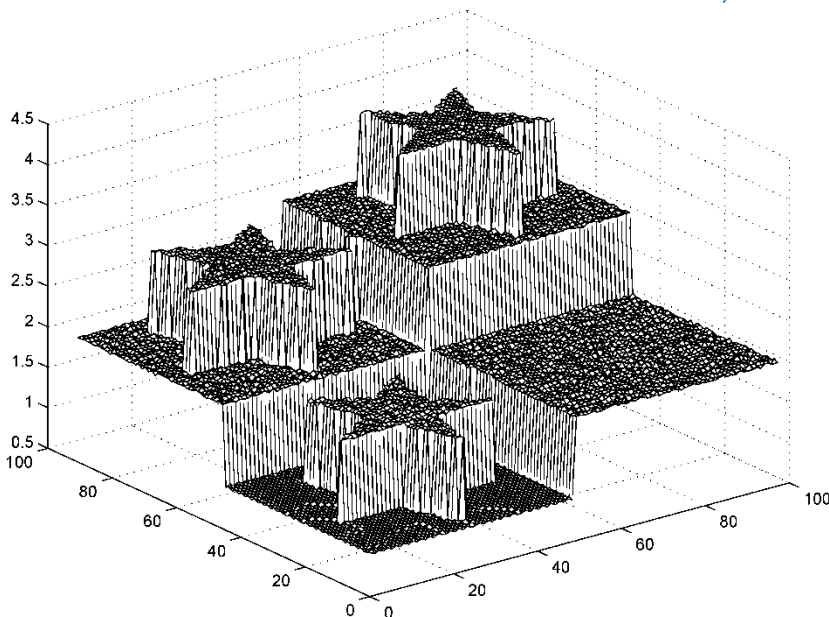
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**Room 3137, floor 3,**  
**HIB (data blokk), Thormøhlensgate 55**



### **Abstract:**

A network can often be represented as a graph. Max-flow/min-cuts over a given graph can be used to find optimal solutions for many complicated network problems. It is known that these kind of problems are often NP-hard and they pose some very challenging minimization problems for simulations. In this talk, we will show how to use graph and cuts methods for some image processing and computer vision problems. Especially, we shall present our recent work extending the concept of max-flow/min-cuts to "networks" that are infinite dimension, i.e we will talk about continuous max-



flow/min-cuts problems. When we discretize these continuous max-flow problems, we come back to the ordinary finite dimension max-flow problems. The continuous max-flow models can be solved through the solution of some partial differential equations. One advantage of the continuous max-flow problem is that we can use many convex optimization methods to solve it. We are released from some restricted searching algorithms for network problems.