Generating Input Data for Optimization Problems in Radio Network Planning

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Abstract: Due to the increasing complexity of cellular systems automatic methods in radio network planning have become more popular in the recent past. In many cases automatic radio network planning requires the solution of a combinatorial optimisation problem. In the past frequency planning for example is a well-known example for the successful application of discrete optimisation in this field. In today's networks problems like location area code planning and optimisation of base station antenna location and configuration are subject to many research projects. The results achieved by the corresponding mathematical algorithms are very sensitive to their input data. On the other hand the generation of this input data is a non-trivial task as well. This presentation gives an overview about the most important combinatorial optimisation problems in radio network planning and focusses on the methods to generate the input data. This includes models to predict path loss as well as traffic and mobility maps.

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