TMA947 / MMG621 — Nonlinear optimization

AMPL aid for the project

1   Getting started

Start by downloading the AMPL package from PING PONG. Create a folder where you will put all your AMPL-related files. Unzip the AMPL package to the folder.

Download the AMPL-files `Belgium.mod`, `Belgium.dat`, and `Belgium.run` from the course homepage and put them in one folder. We encourage you to look at the files to understand how the model is structured.

Open a command window, go to the folder with the AMPL-files. Now you may start AMPL by giving the command: `ampl Belgium.run;`

2   AMPL

The AMPL-file `Belgium.run` contains basic commands to run AMPL. Do not forget to write ";" after each command.

To load the model, write
`model Belgium.mod;`

To load the data, write
`model Belgium.dat;`

To choose the solver, write
`option solver "/.../snopt";`
where ... has to be replaced by the path to the folder containing the AMPL package.

To obtain the optimal solution, write
`solve;`

You may now take a closer look at the solution. To see the value of a variable use the command `display`. As an example to see the flows sent between cities write
`display f;` The name of other variables may be found by studying the model.

You may obtain the reduced costs for these variables by writing
`display f.rc;`

In the same fashion, you may get the dual variables corresponding to the constraint `Demand` by writing
`display Demand.dual;`

You may get the slack in the constraints by writing
`display Demand.slack;`