EPFL
ENAC INTER TRANSP-OR
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Mathematical Modeling of Behaviour
Fall 2011/2012

EXERCISES SESSION 5

The topic of this lab and the lab next week is the Multinomial Logit (MNL) model. You can choose among the *Airline Itinerary Choice (Boeing)* and the *Residential Telephone Services* datasets. On the course web site we provided the data files (`.dat`) as well as 3 example models (`.mod`) for each dataset.

The goal of this lab is to estimate different specifications of MNL models.

Question 1
Choose one of the two datasets and study the 3 provided model specifications (the `.mod` files). Try to understand which are the underlying assumptions and how these assumptions are modelled. Which of the provided models is the best? How do you test this?

Question 2
Choose one of the 3 models as a baseline and improve it by performing the following actions:

1. Add some attributes of the alternatives to the utilities.

2. Try a non-linear specification of the utilities (e.g. piecewise linear specification, Box-Cox transformation, power series, log transformation, etc.). How would you test your new model against the linear model? Propose different solutions to this and apply them to the chosen dataset.

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