Help File for Dolo

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1 The `YAML` file: describe the model

2 The matlab file

Assuming that your model'matlab file is called `baseline-model.m`.

By runing the comande:

> `model=baseline-model.m`

you will get a structure which contains all the information about your model describe in your yaml file. The model is given as:

$$s_{+1} = G(s, x, \varepsilon) \qquad \text{(Transition)}$$
$$\mathbb{E}_t[F(s, x, \varepsilon, s_{+1}, x_{+1}] = 0 \qquad \text{(Arbitrage)}$$

This structure is organize as follow:

- `model.s_ss`: Steaty-state value of state variables.

- `model.x_ss`: Steaty-state value of control variables.

- `model.params`: Value of parameters in a array. The order is the same as in the declaration of parameters in the asociated yaml file.

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- `model.X`: Perturbation method decision rule. One can find the value of the control variable around the steady-state using the following formula:

$$x_t = x_{ss} + X(s_t - s_{ss})$$

- `model.f`: Matlab function which give you the function F used in (Arbitrage). The function could be call with the following syntax:

  `f(s,x,s`$_{+1}$`,x`$_{+1}$`,p)` where `p` stend for the parameters of the model.

  One will get the value of the function and the value of the derivative. The output is given as

  `[F,F`$_s$`,F`$_x$`,F`$_{s_{+1}}$`,F`$_{x_{+1}}$`]=f(s,x,s`$_{+1}$`,x`$_{+1}$`,p)`

  where `F`$_s$`,F`$_x$`,F`$_{s_{+1}}$`,F`$_{x_{+1}}$ are the derivatives with respect to the states, the controls, the next period states and the next period controls respectively.

- `model.g`: Matlab function which give you the function G used in (Transition). The function could be call with the following syntax:

  `g(s,x,e,p)` where `p` stend for the parameters of the model.

  One will get the value of the function and the value of the derivative. The output is given as

  `[G,G`$_s$`,G`$_x$`]=g(s,x,p)`

  where `G`$_s$`,G`$_x$ are the derivatives with respect to the states and the controls respectively.