Patterns of sound localization/lateralization under bone conduction due to wave interference

Demo Codes of the Theoretical Model

Descriptions

- **model_symmetrical.m** is the demo code for the theoretical model (assuming that the skull is perfectly symmetrical.
- **model_universal.m** is the demo code for general cases
- All the demo codes follow the GNU GPL license.

Usage

- The codes were developed and tested in MATLAB v2023a environment. But earlier versions may also be Okay.
- Users can adjust the parameters interactively, and the contour pattern would refresh in real-time.
- For 'model_symmetrical.m', only the parameter T (or TA, trans-cranial attenuation) is adjustable, users can adjust its amplitude and phase by:
    - Drag the corresponding slide bar
    - Click the arrows besides the slide bar
    - Direct edit the values

  The number shown in the bottom of the `TA` panel gives the complex value of the T value (please refer to the following figure).
- For 'model_universal.m', four parameters are adjustable, namely, the transfer functions HLL, HRR, HLR, and HRL.

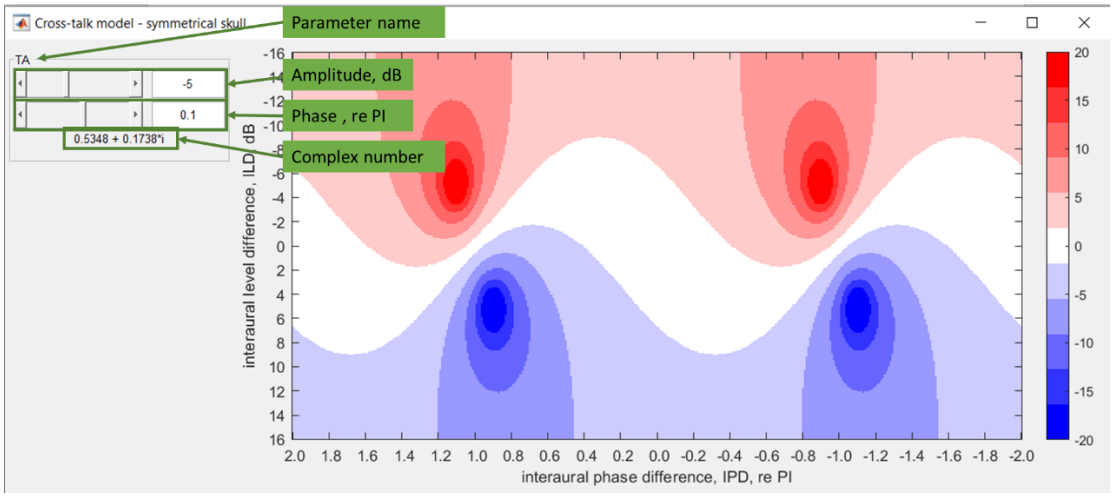

Figure: Demonstration of using the graphical interface