2.1 Diffraction on a planar absorbing object

Matlab program

The program computes attenuation caused by a thin obstacle, and Fresnel zones radii.

First, the path of Matlab has to be set to the folder **Fresnel**. The program is run using the m-file `fresdif`. Passing the introductory window of the program, the reader is asked for input parameters (frequency, distance of the obstacle from the source and the observation point). Choosing the button Display manually, the height of the obstacle can be changed manually by the scrollbar, and the changing transmition can be observed. Choosing the button Display automatically, transmition changes without user interaction. If one of the above-described two buttons is chosen, a new window is opened. In the upper-left corner, a clothoid is displayed. In the upper-right corner, the dependency of the attenuation on the ratio H/r_1 (distance between the obstacle edge and the line VP over the first Fresnel zone radius) is depicted. In the down left corner, a sequential covering of Fresnel zones is shown, and in the down right corner, important parameters of the task are listed. Moreover, we can find here the button Finish (which ends the program) and the button Again (which enables to input new data and perform new computation).