Forward modeling and inversion of numerical datasets

The electrical resistivity is a property of the subsurface. Each material has a characteristic resistivity (high or low). The resistance is the measured value in geophysical electrical surveys and it is given by the ratio of the measured voltage (in the potential electrodes) by the injected current (in the current dipole).

Steps:

1) Start (double click) res2Dmod
2) Read the resistivity model: File → Read file with forward model → file.mod (i.e., plume_5m.mod)
3) Visualization of the model: Edit → display model
4) Save image: Print → Save screen as BMP file
5) Write the array type: Edit → Change array type. Here we define if the "measurements" will be modeled with schlumberger, wenner, dipole-dipole configurations
    a. Try dipole-dipole with n=5, a=5

6) Forward modeling: Model computation → Calculate potential values.
7) Visualize the data: Edit → Display model [This is the pseudosection of the modeled resistances with the array type selected]
8) Save image: Print → Save screen as BMP file
9) Save the results for the inversion: File → Save results in Res2Dinv format
   Be careful with the names defined for each file should change to avoid overwriting the same file after using different electrode configurations. Do not use space or symbols in the names of the files. Use different configurations and also different separation between electrodes (***a*** and ***n*** values)

10) Repeat steps 5 to 10
    a. Try wenner alpha with n=3
    b. Try wenner alpha with n=6
    c. Try wenner beta with n=6
    d. Try wenner gamma with n=6
    e. Try gradient with n=6
    f. Try dipole-dipole with n=10, a=5
    g. Try dipole-dipole with n=20, a=5
    h. Try dipole-dipole with n=20, a=1
    i. Try dipole-dipole with n=1, a=20

11) Double click on res2dinv
12) Open the file with the modeled resistances: File → read data file → your file (step 9)Inversion →Carry out inversion
13) Save images Print →save screen as BMP file