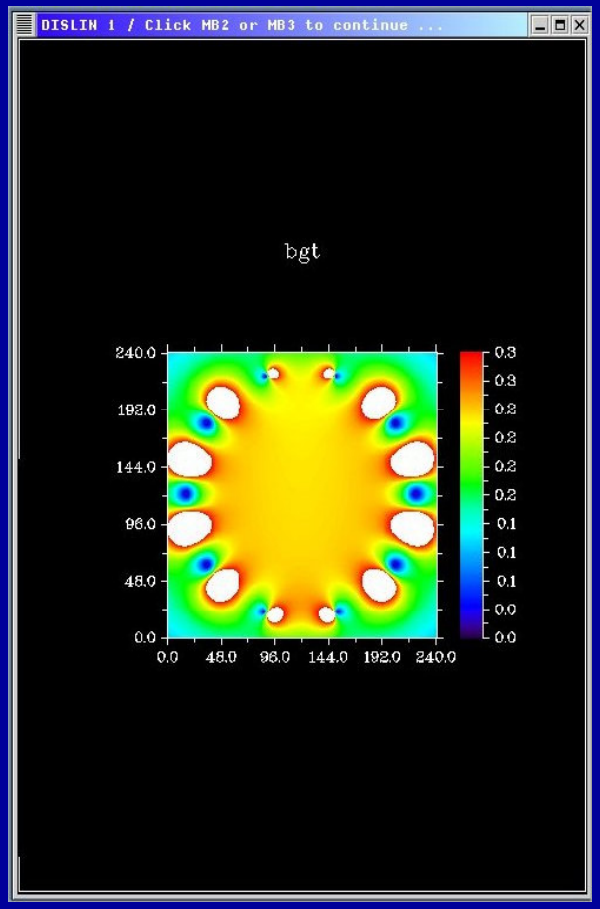
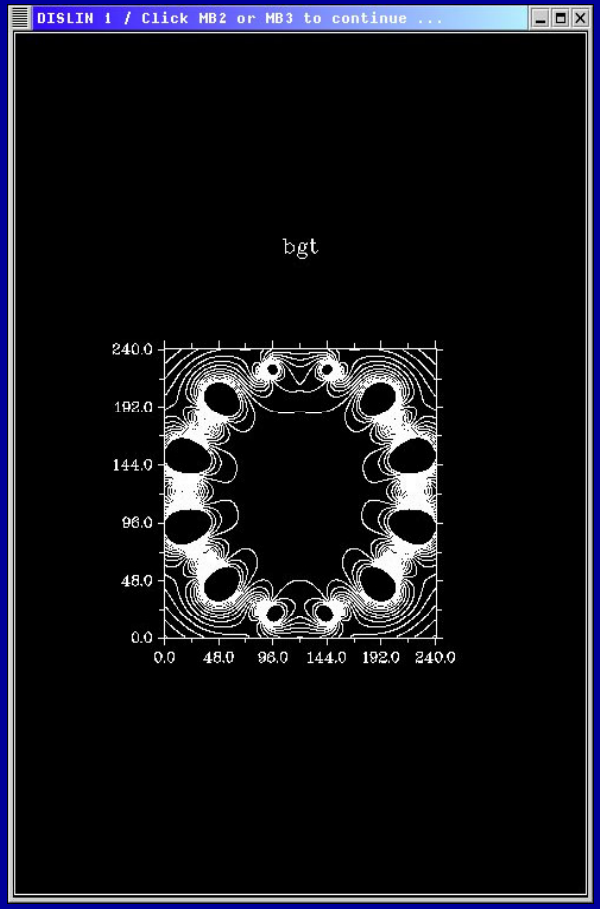
At first glance, an overview of the software applications on a few slides …..

Field_map calculation – 12 legs birdcage

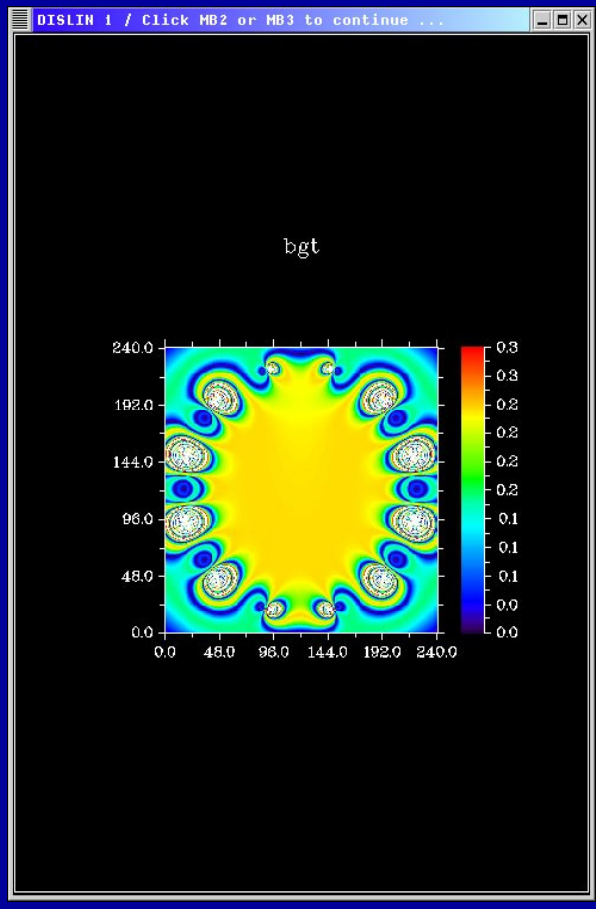
B_1 amplitude



B_1 contour plot

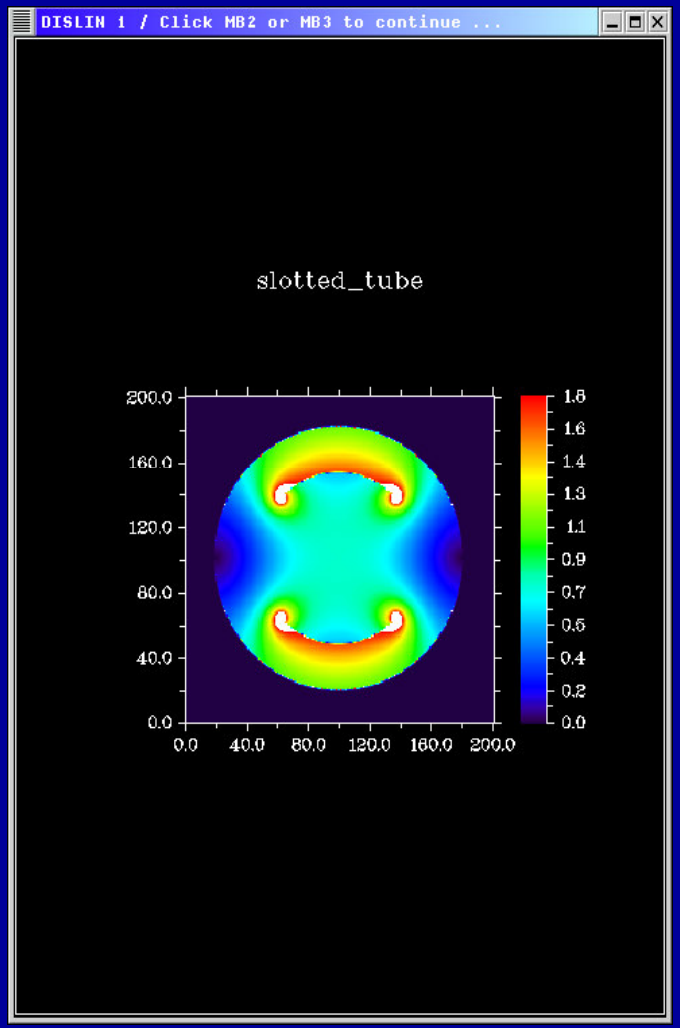


B_1 mapping:
360^0-90^0-Acq

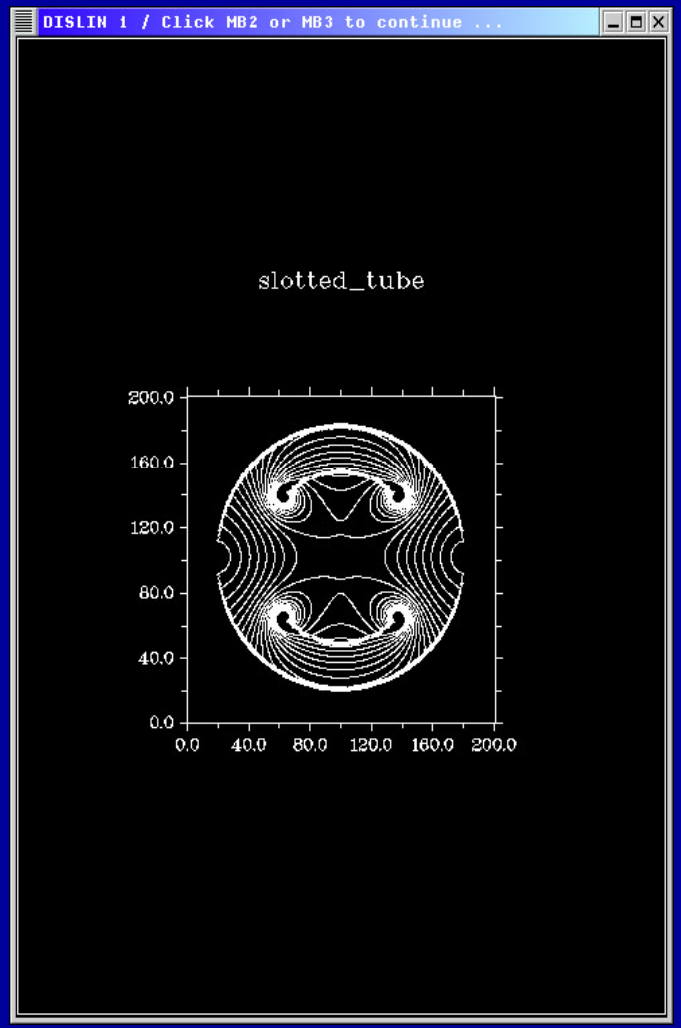


Field_map calculation – slotted tube

Colour map

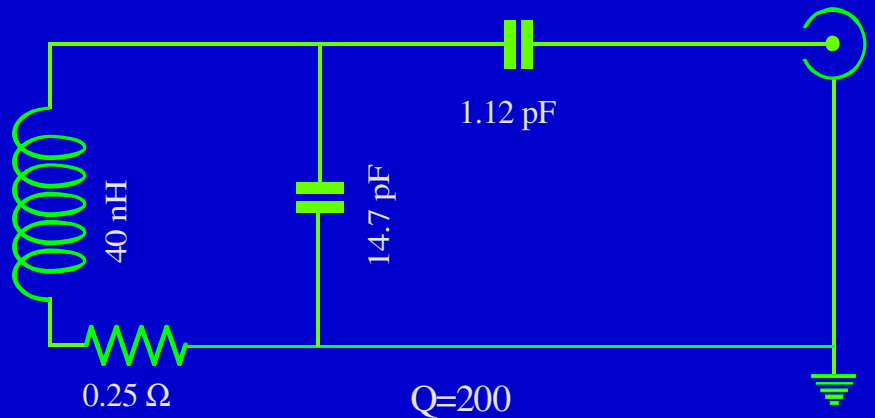


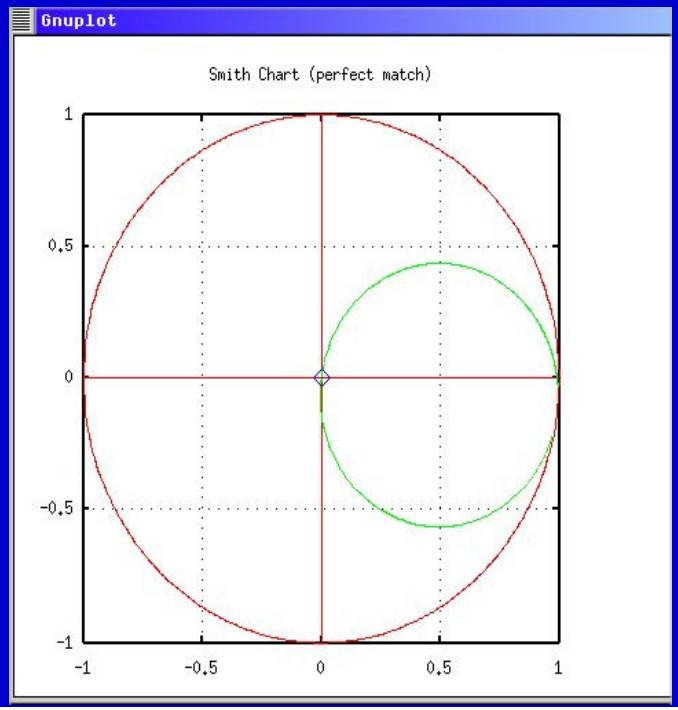
Contour plot



Circuit analysis

Capacitive matching





Birdcage evaluation

joel@jmis:~/devs/probes/CD_book/testing/birdcage/tests

File Edit Settings Help

```
bg12_undercoupled.par  current12    ii          sweep.par
build_ic               current16    ir          test_birdcage
@tests 87$ ./test_birdcage

*******     evalution of the shielded birdcage       *******
*****   described in bg12.par and tuned at 200 MHz     *****
***             with a given Q factor (150 by default)         ***

Q = 149.347326
(R_leg = 0.567236 Ohms)
(R_ER = 0.048263 Ohms)
P = 10.000000 W
w = 200.000000 MHz
I = 7.324733
I(2N) = 1.895780
b1(+) = 0.273806 Gauss, pw90(1H) =  214.6 µs


*** You may run now "test_birdcage2" to simulate its
    - electrical properties and
    - magnetic field distribution ***


@tests 88$
```

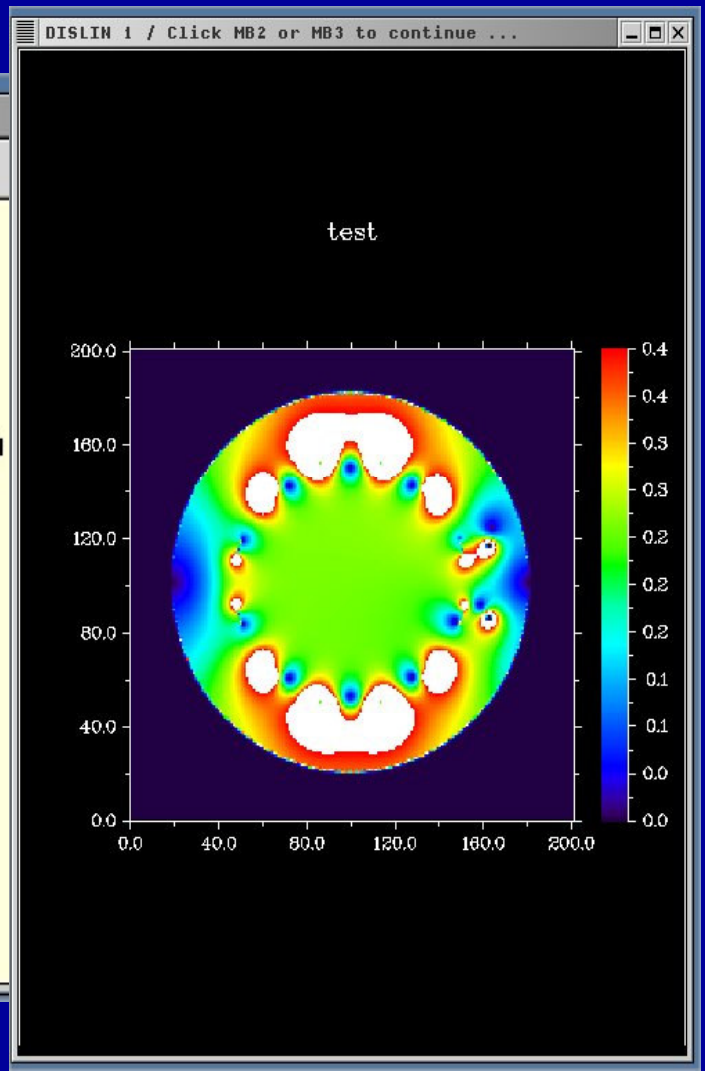
Birdcage evaluation

Birdcage 6 resonant modes

Birdcage evaluation

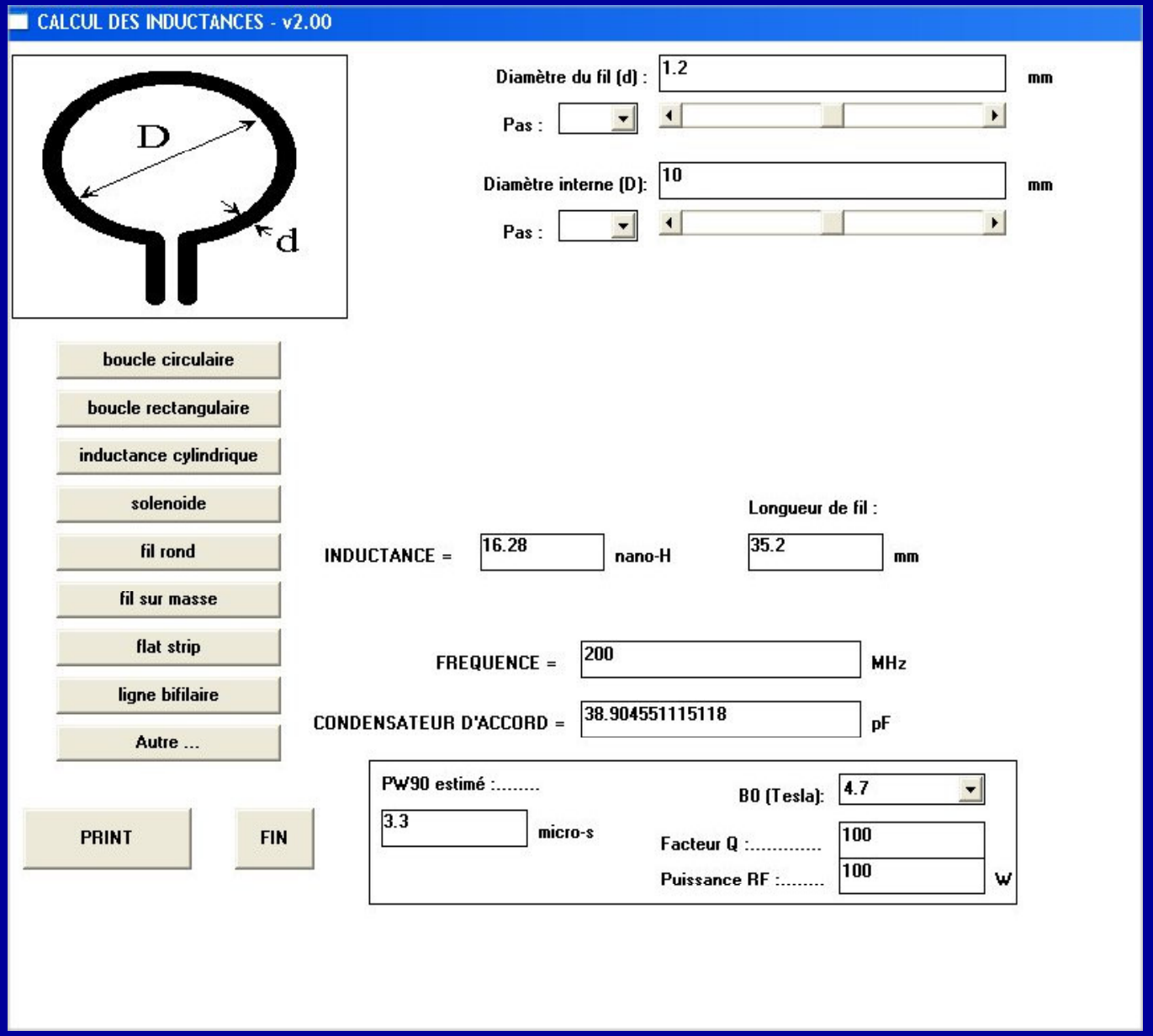
Birdcage B_1 amplitude map

```
joel@jmis:~/devs/probes/CD_book/testing/birdcage/tests
File  Edit  Settings  Help
Ending calculation at Mon Nov 28 11:14:31 2005

... svd done
... writting results
Hit return to continue ...
Hit return to continue ...

Quasi-static magnetic field calculation by the segments method
Probe description file name is test.ic
The probe is divided into 440 segments
Calculation is done in a box of dimensions :
x = 100.000000 y = 100.000000 z = 0.000000
starting at x = -50.000000 y = -50.000000 z = 0.000000
and divided into x = 201 y = 201 z = 1 cells

Starting calculation at Mon Nov 28 11:15:16 2005
Ending calculation at Mon Nov 28 11:15:33 2005

input file = test.bxyz
plot_type = 1
plot_field = 1
terminal = XWIN
output file =
```



Utilitarian

Calself
Small surface coil



Utilitarian

Impedance-matching

joel@jmis:~/devs/probes/CD_book/testing/utilities/impedance_matching

File Edit Settings Help

```
@impedance_matching 76$ adapt

usage : adapt w0(MHz) L(nH) Q c0(pF)

@impedance_matching 77$ adapt 200 50 200 0

Coil resistance : 0.314159 Ohms
Q factor : 200.000000
Pre-tuning capacitance : 0.000000 pF

--- Non symmetric configuration ---
Tuning capacitance : 11.662921 pF
Matching capacitance : 1.005913 pF

--- Symmetric configuration ---
Symmetrizing capacitance : 25.329663 pF
Tuning capacitance : 23.336642 pF
Matching capacitance : 2.023965 pF
@impedance_matching 78$
```