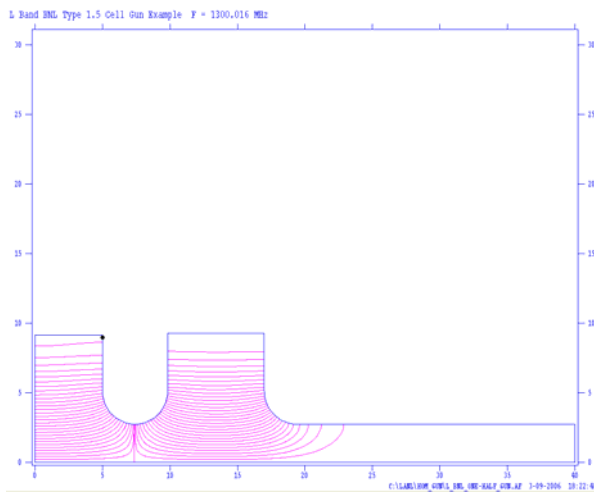


April 12, 2006

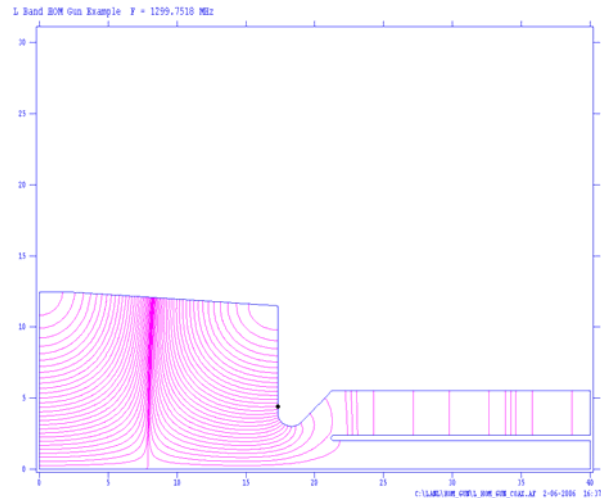
Polarized RF Gun Project

- Main emphasis to date has been on HOM RF design (Wang, Lewellen)
- Parameters for initial beam dynamics studies established. Colby will do initial simulations of emission from cathode using PARMELA
- Expect decision on SBIR-I application in about 1 month
- Polarized RF Gun Meeting planned for June 5th at SLAC
- Abstract on rf design submitted to LINAC06

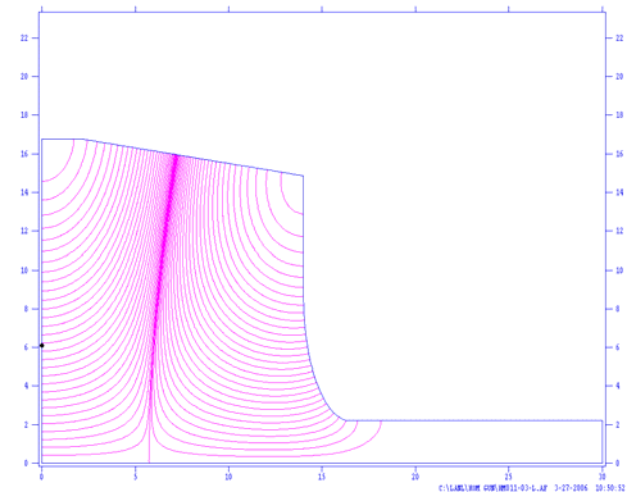
Comparison of HOM with 1.6 Cell RF Gun



1.6 Cell Gun



HOM Gun1



HOM Gun2

Parameters for the case scaled to 40 MV/m electrical field on cathode surface

| | Power (MW) | E_{\max}/E_c | E_{\max} (MV/m) | r (M Ω /m) | Max P_d (kW/cm ²) |
|------------------|------------|----------------|-------------------|---------------------|---------------------------------|
| 1.6 Cell | 2.78 | 1.04 | 41.4 | 20.30 | 2.58 |
| HOM1 | 3.92 | 1.47 | 58.6 | 11.07 | 5.09 |
| HOM2 (John 3/10) | 14.63 | 1.48 | 59.2 | 7.53 | 14.31 |