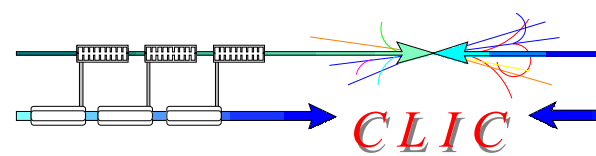


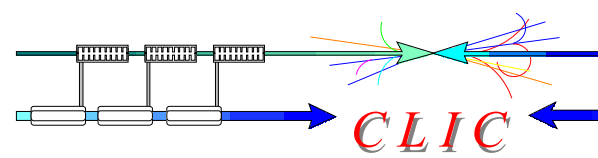
GdfidL for TDS wakefield calculations

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- Motivation
- Full length Tapered Damped Structure (TDS) results comparison
- Perfectly Matched Layer (PML) and SiC loaded TDS results comparison

Transverse wakefields calculation



GdfidL in time-domain

$$A_1 = 1120 \text{ V} / \text{pC mm m}$$

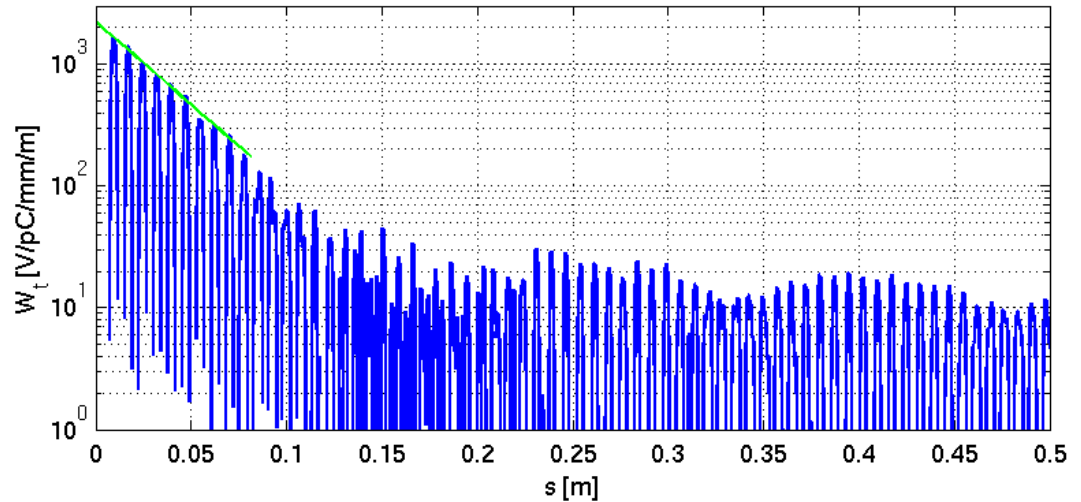
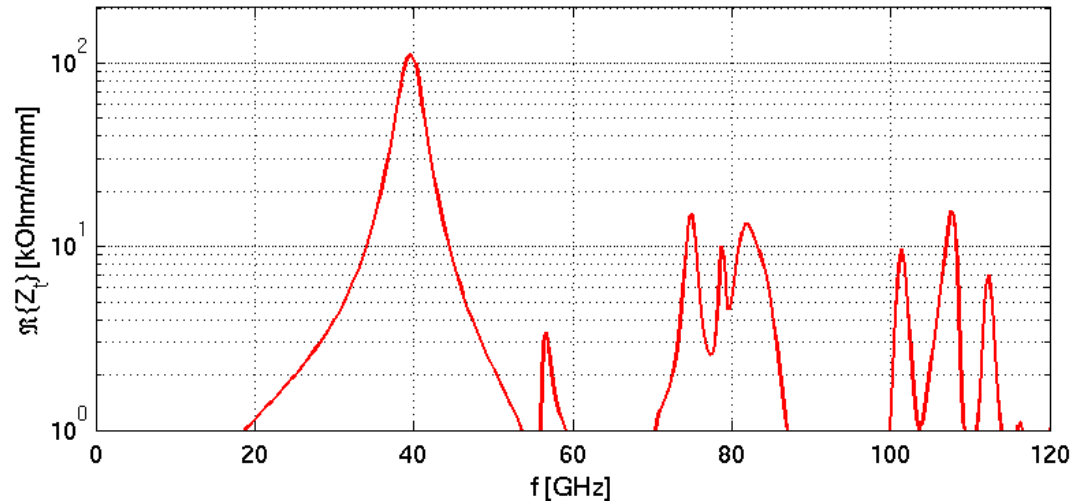
$$f_1 = 39.66 \text{ GHz}$$

$$Q_1 = 12.6$$

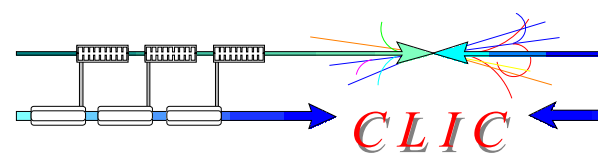
HFSS in frequency-domain

$$f_1 = 39.66 \text{ GHz}$$

$$Q_1 = 12.2$$



3-cells model of wakefields



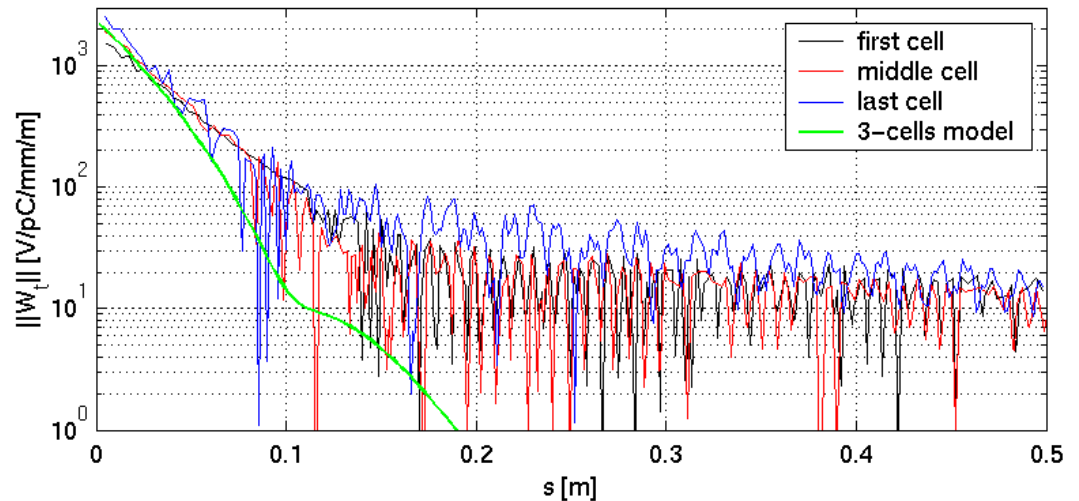
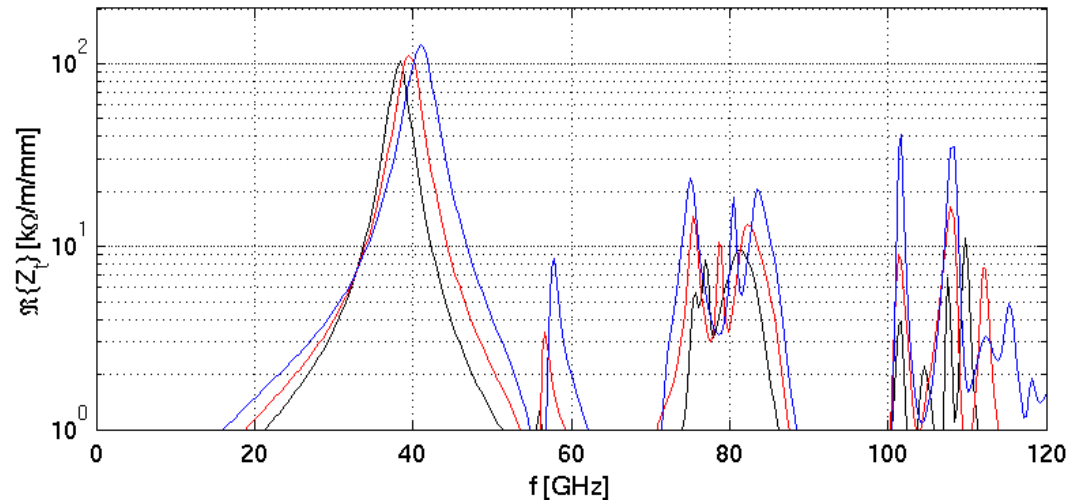
A_1, f_1, Q_1 for each cell are interpolated from its values in the first, middle and last cells and then the structure wakefields are calculated using:

$$W_t = \sum_{i=1}^{N_{cells}} A'_{1i} e^{-\frac{\omega_{1i}t}{2Q_{1i}}} \sin(\omega_{1i}t)$$

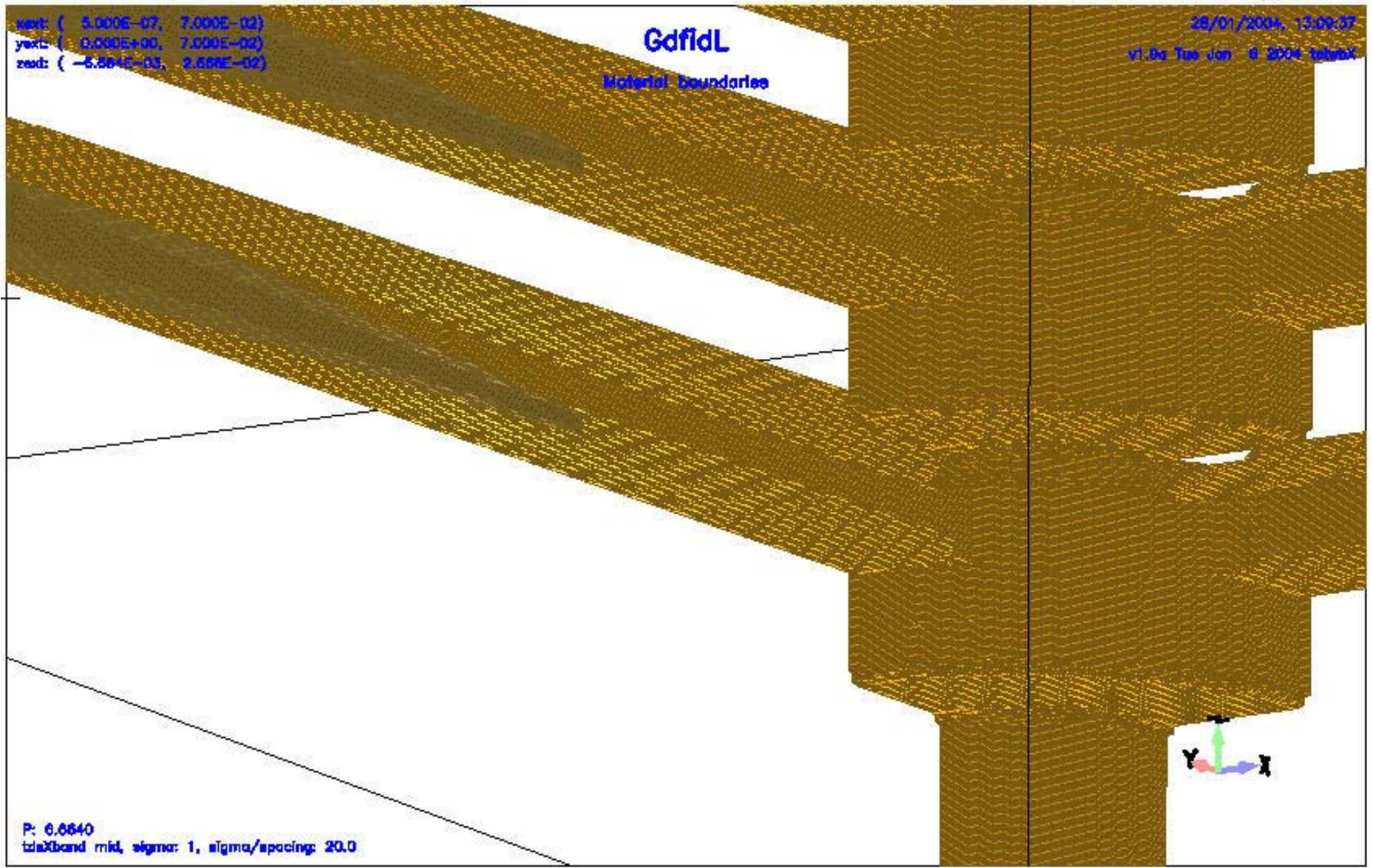
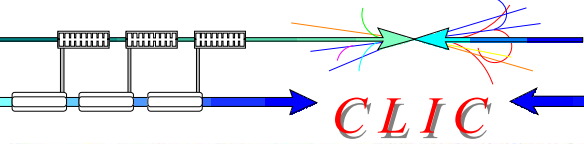
where

$$A' = Ae^{-\frac{\omega^2 \sigma^2}{2c^2}}$$

$$\sigma = 0.6 \text{ mm}$$

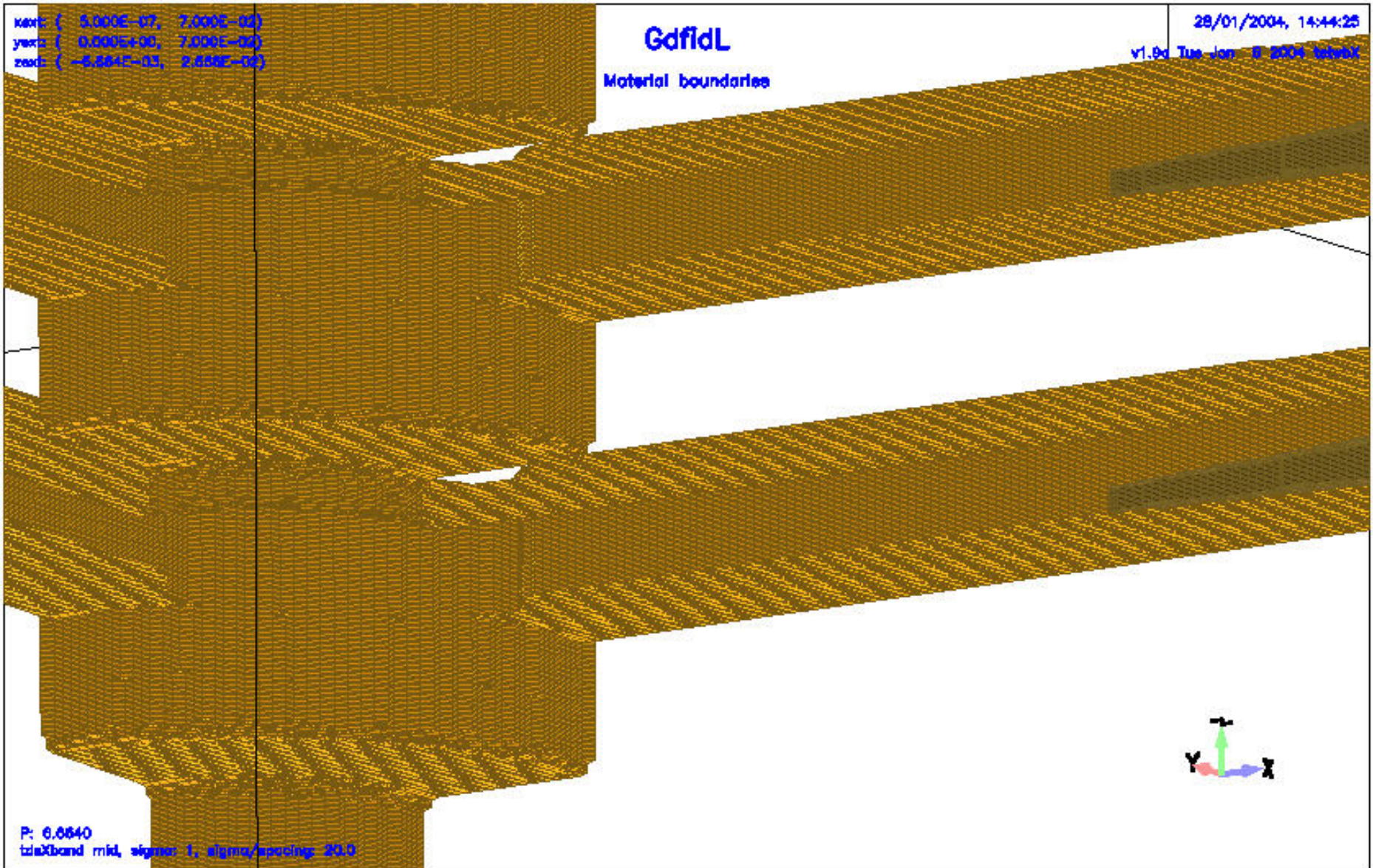


TDS geometry in GdfidL



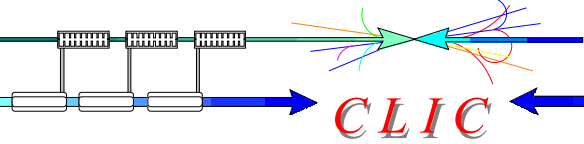
TDS geometry in GdfidL

CLIC





SiC load geometry in GdfidL



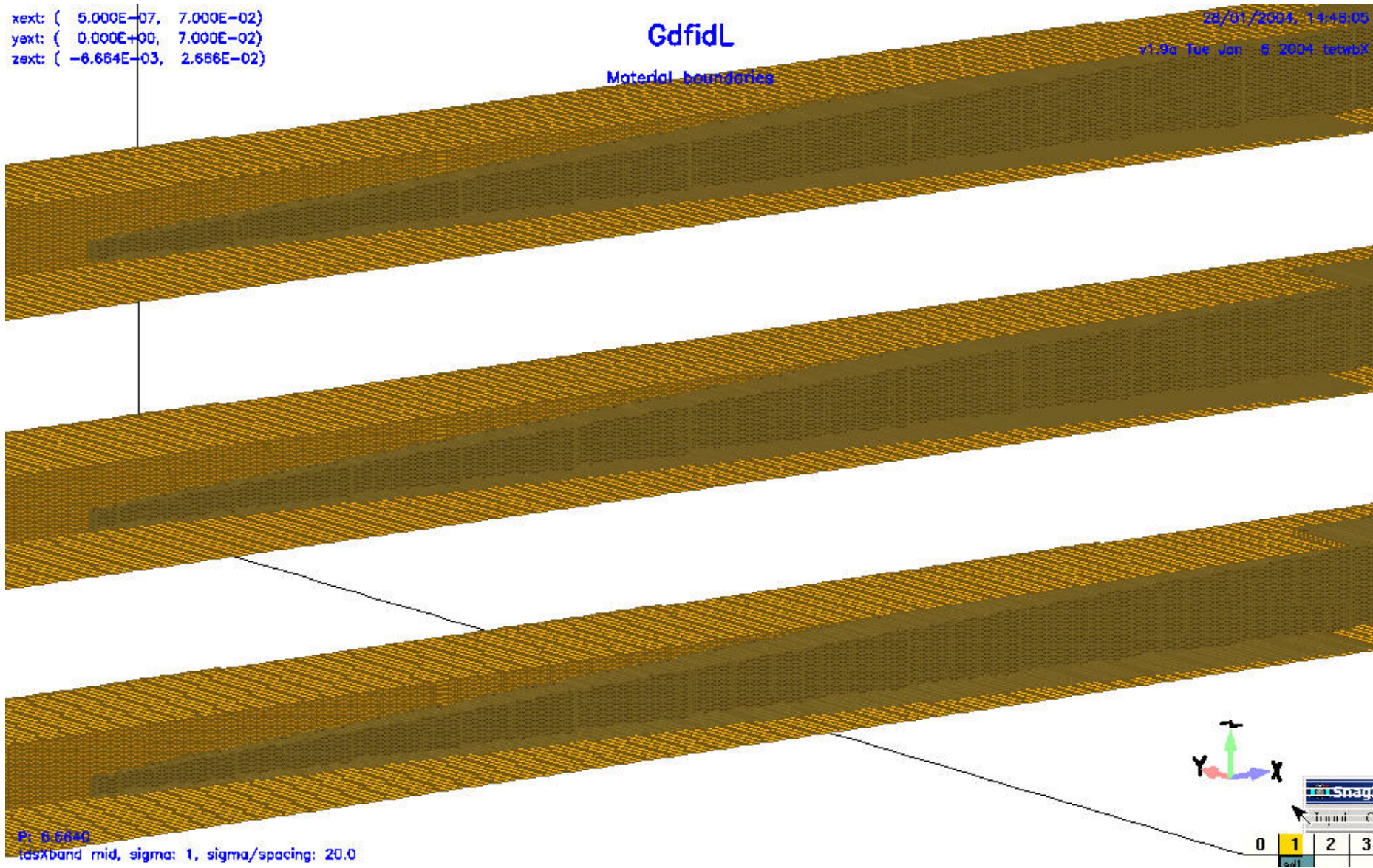
CLIC

xext: (5.000E-07, 7.000E-02)
yext: (0.000E+00, 7.000E-02)
zext: (-6.664E-03, 2.666E-02)

GdfidL

Material boundaries

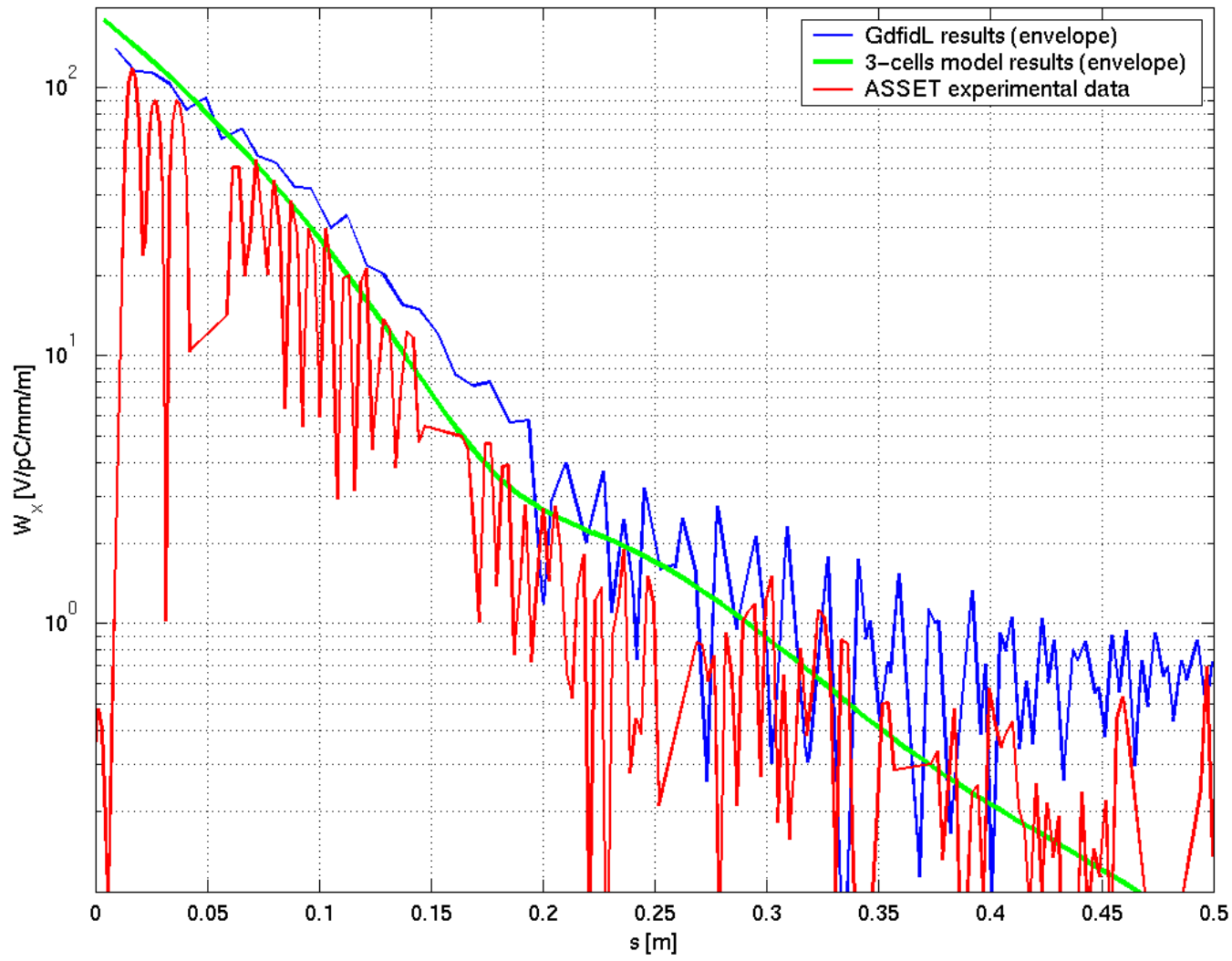
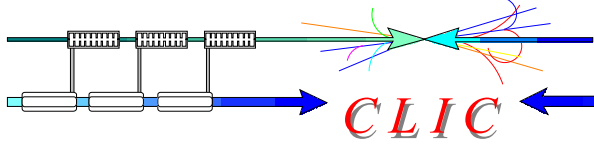
28/01/2004, 14:48:05
v1.90 Tue Jan 6 2004 tgr2002



P: 6.0000
tdsXband mid, sigma: 1, sigma/spacing: 20.0

0	1	2	3
	Load		

Full length TDS results comparison



PML and SiC loads comparison

