

"Antenna source concept"

- new approach to antenna design

MECAS ESI

S.F.O.

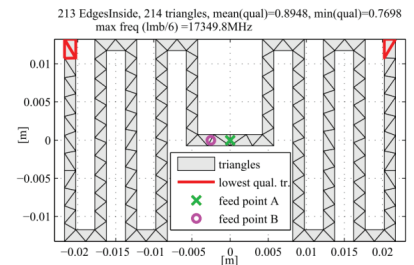
import from
FEKO/Comsol/Matlab,
3D model editor

synthetic fractals
IFS and L-system
supported

EM model

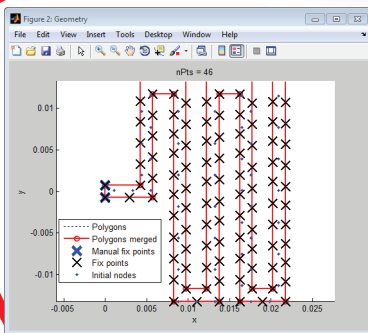
fully parametrized
model (import from
.dwg, and bitmaps possible)

RWG basis functions,
local refinement possible

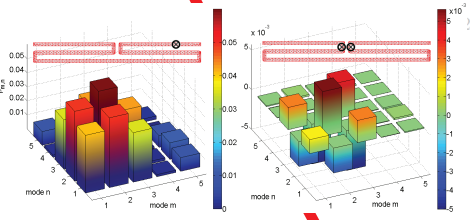


Discretization

job manager
is developed

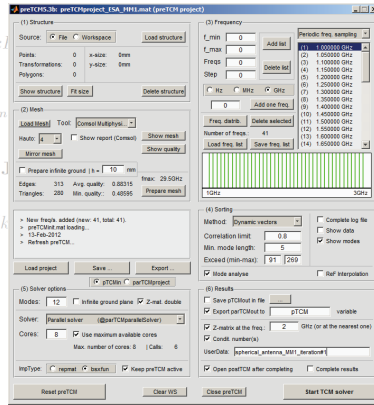


$$\frac{1}{4\pi\omega\epsilon} \int \int \nabla \cdot \mathbf{J}(\mathbf{r}) \nabla' \cdot \mathbf{J}^*(\mathbf{r}') C(kR) d\mathbf{r} d\mathbf{r}'$$

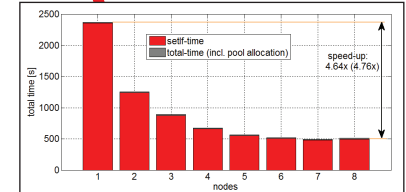


$$\frac{1}{4\pi\omega\epsilon} \int \int (k^2 \mathbf{J}(\mathbf{r}) \cdot \mathbf{J}^*(\mathbf{r}') + \nabla \cdot \mathbf{J}(\mathbf{r}) \nabla' \cdot \mathbf{J}^*(\mathbf{r}') S(kR)) d\mathbf{r} d\mathbf{r}'$$

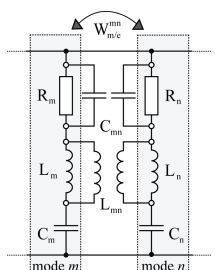
fast gradient /
robust heuristic /
hybrid optimization
algorithms



adaptive
frequency
solver



advanced
eigenvalue
tracking



Optimization parametric sweep

routines are editable,
 functions are user defined

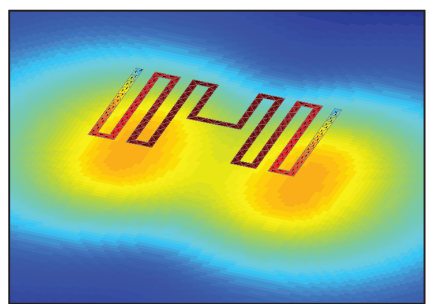
GPU
supported

both modal (CM) and
structural decomposition

parallel and
distributed computing
implicitly supported

EM solvers MoM, TCM

Post Processing



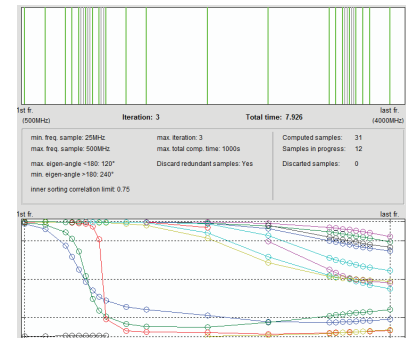
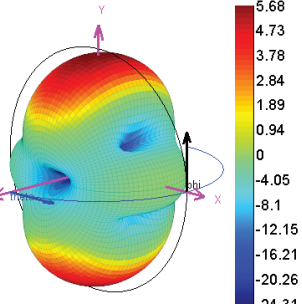
both modal and total
quantities available
(all near-, far-field
and circuit parameters)

measurable Q
concept integrated

$$\mathcal{L}(U, V) = \frac{1}{4\pi\epsilon\omega^2} \int \int U(t) \dots$$

$$\mathcal{L}_{rad}(U, V) = \frac{1}{4\pi\epsilon\omega^2} \int \int U(t_z) \dots$$

$$\mathcal{L}_\omega(U, V) = \frac{1}{4\pi\epsilon\omega^2} \int \int \omega \frac{\partial U}{\partial \omega} \dots$$



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See also: antennatoolbox.com