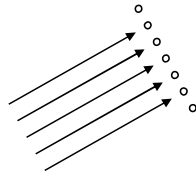




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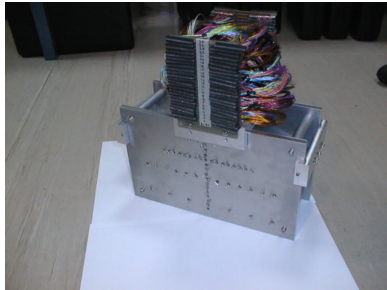
Imaging Systems

Medical Ultrasound and Sonar

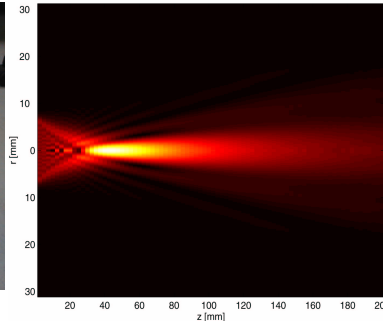


$$y(t) = \sum_{n=1}^N w_n x_n(t) e^{i\vec{x}(\vec{k} - \vec{k}_0)}$$

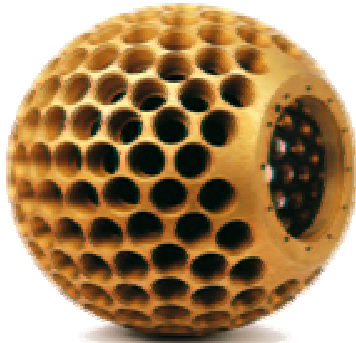
Prototype 3D ultrasound array



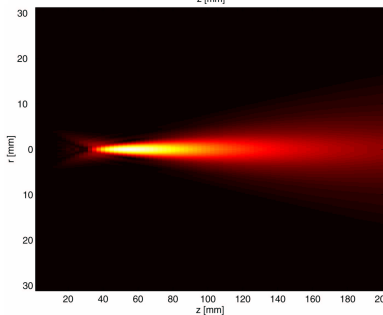
Standard ultrasound beam



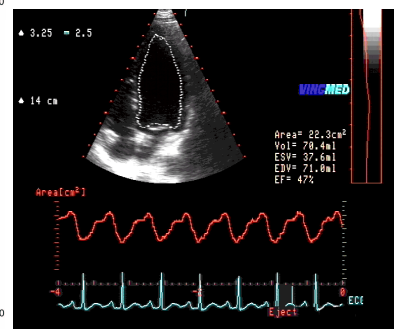
Fetal ultrasound scanning



Sonar array for fishery research



Nonlinear ultrasound beam



2D ultrasound heart image

- Improved resolution and capability from acoustic arrays.
- EU Project (1996-2000): Real-time 3D Ultrasound Imaging System with Advanced Transducer Array.
- Lab with scanner sponsored by GE Vingmed Ultrasound.
- Optimization of sonar arrays for several sonar companies.
- Simulation of acoustic fields including non-linear effects.
- Developed free toolbox for Matlab field simulation: Ultrasim.
- Basic research on modelling of limited diffraction beams.