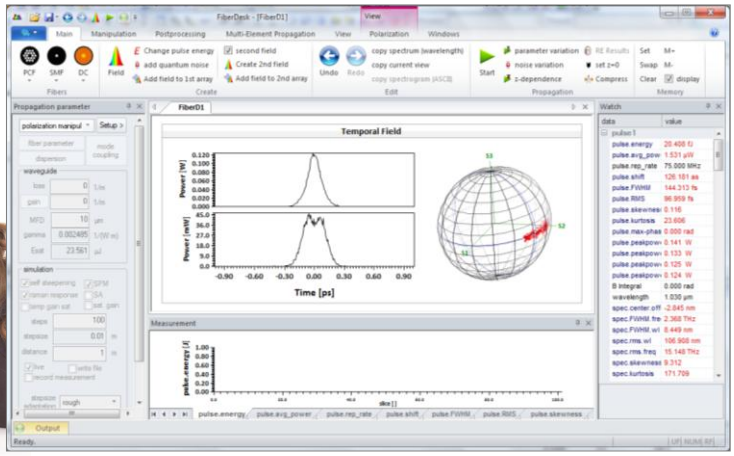
fiberdesk

nonlinear pulse propagation

Fiberdesk is a software for linear and nonlinear pulse propagation. It is based on solving the extended nonlinear Schrödinger equation by the split-step Fourier transform method.

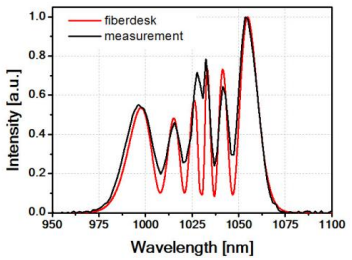


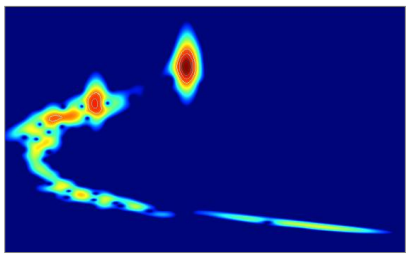
$$\frac{\partial A}{\partial z} = -\frac{\alpha}{2}A + \int_{-\infty}^{\infty}\frac{g(\omega)}{2}\tilde{A}(\omega)e^{-i\omega T}d\omega + \sum_{n\geq 2}\beta_n\frac{i^{n+1}}{n!}\frac{\partial^n}{\partial T^n}A + i\gamma\cdot\left(1+\frac{i}{\omega_0}\frac{\partial}{\partial T}\right)\left(A(T)\int_{-\infty}^{\infty}R(\tau)\left|A(T-\tau)\right|^2 d\tau\right)$$

$$\frac{dP_k}{dz} = \left(-\eta_k\sigma_{12}^{(k)}N_0 + \eta_k\left(\sigma_{12}^{(k)}+\sigma_{21}^{(k)}\right)N_2\right)P_k - 2\sigma_{21}^{(k)}N_2 h\upsilon_k\Delta\upsilon_k$$

Selected features:

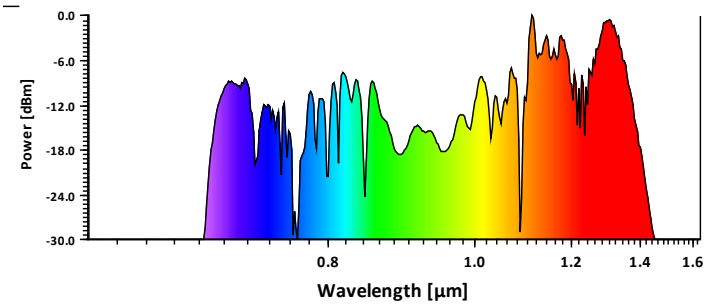
- adaptive stepsize control, optimized processing speed
- post processing of simulated data (movie creation, ASCII export etc.)
- import of experimental data
- full windows based control of data
- rate equation gain
- polarization control





Applications:

- supercontinuum generation
- short pulse fiber lasers
- regenerative amplifiers
- realistic fiber amplifiers (ASE, saturation)



Requirements: Windows XP / Vista / 7
Pentium compatible or above

www.fiberdesk.com