This movie shows the development of the spectrum of a the previous self-phase modulating pulse. The pulse is a Gaussian $e^{-(t)^2}$. The phase grows linearly with distance (and thus as time evolves in the movie) to a peak value of 7π.

For a mode-locked laser the spectrum would be discrete with a frequency separation of $\frac{c}{2L} + \delta$ where L is the cavity length and δ is know as the carrier slippage.