

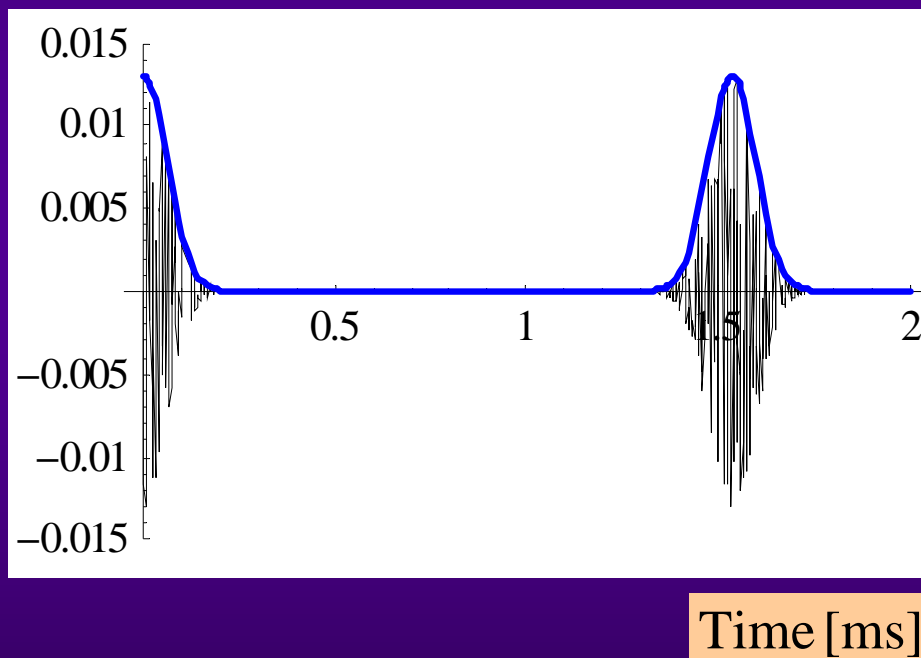
# EFFECT OF NONLINEARITY ON RECOHERENCE AT PS INJECTION

E. Métral

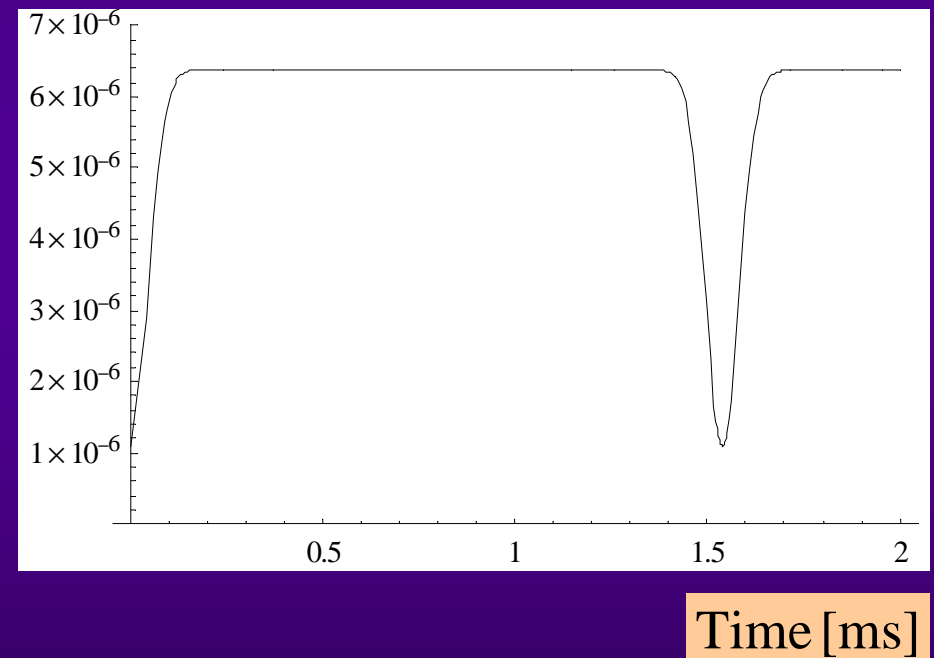
# CHROMATICITY AND NONLINEAR DETUNING (see RLC meeting 18-02-05)

- ◆ Analytical formulae by Minty & Chao & Spence (SLAC-PUB-95-6815)  $\Rightarrow$  Application to the PS without nonlinear detuning (full recoherence)

Bunch centroid motion [m]



Bunch rms emittance [m]



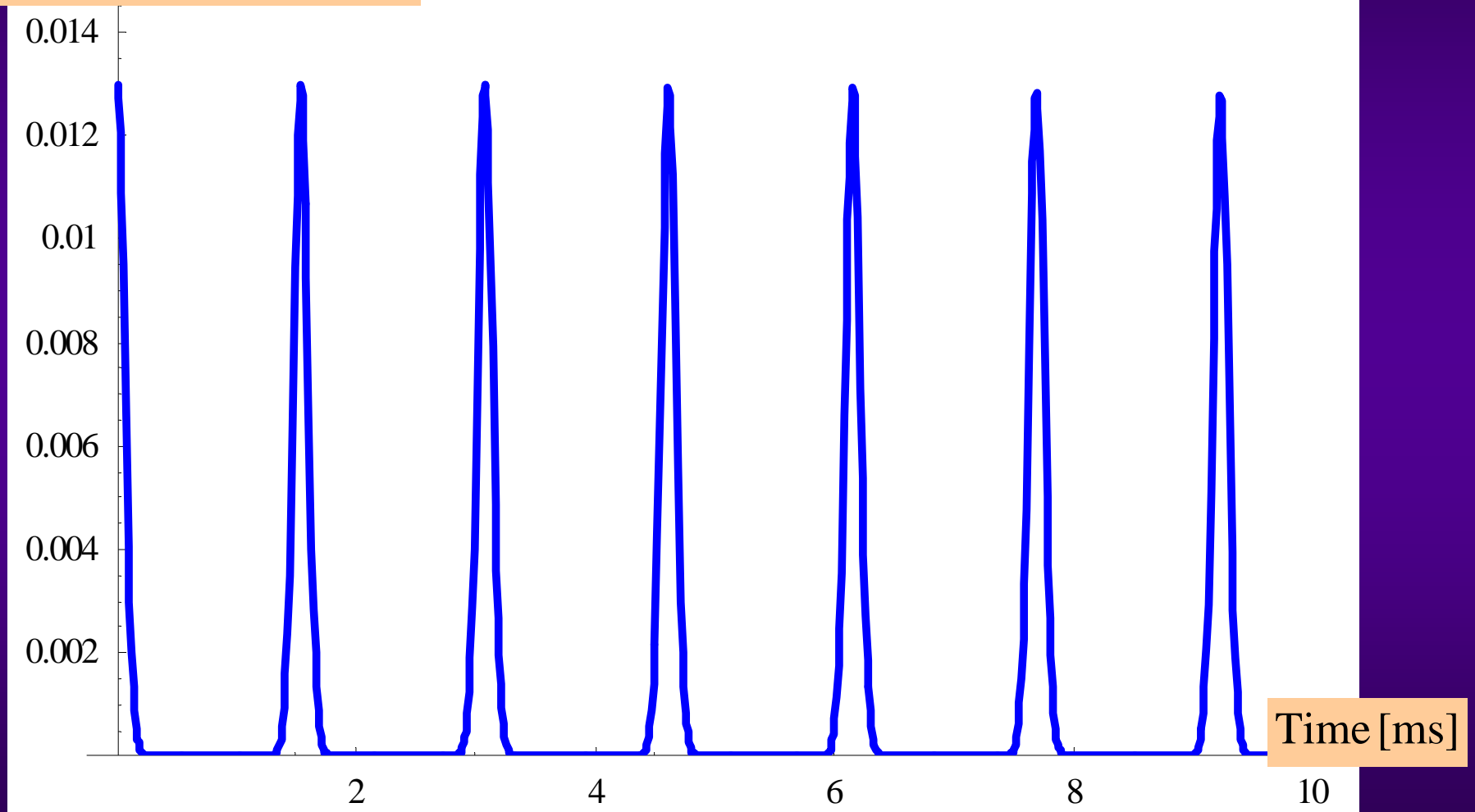
$$\xi_x \approx -1$$

$$T_s \approx 1.5 \text{ ms}$$

# EFFECT OF NONLINEAR DETUNING

If detuning from amplitude is  $10^{-6}$

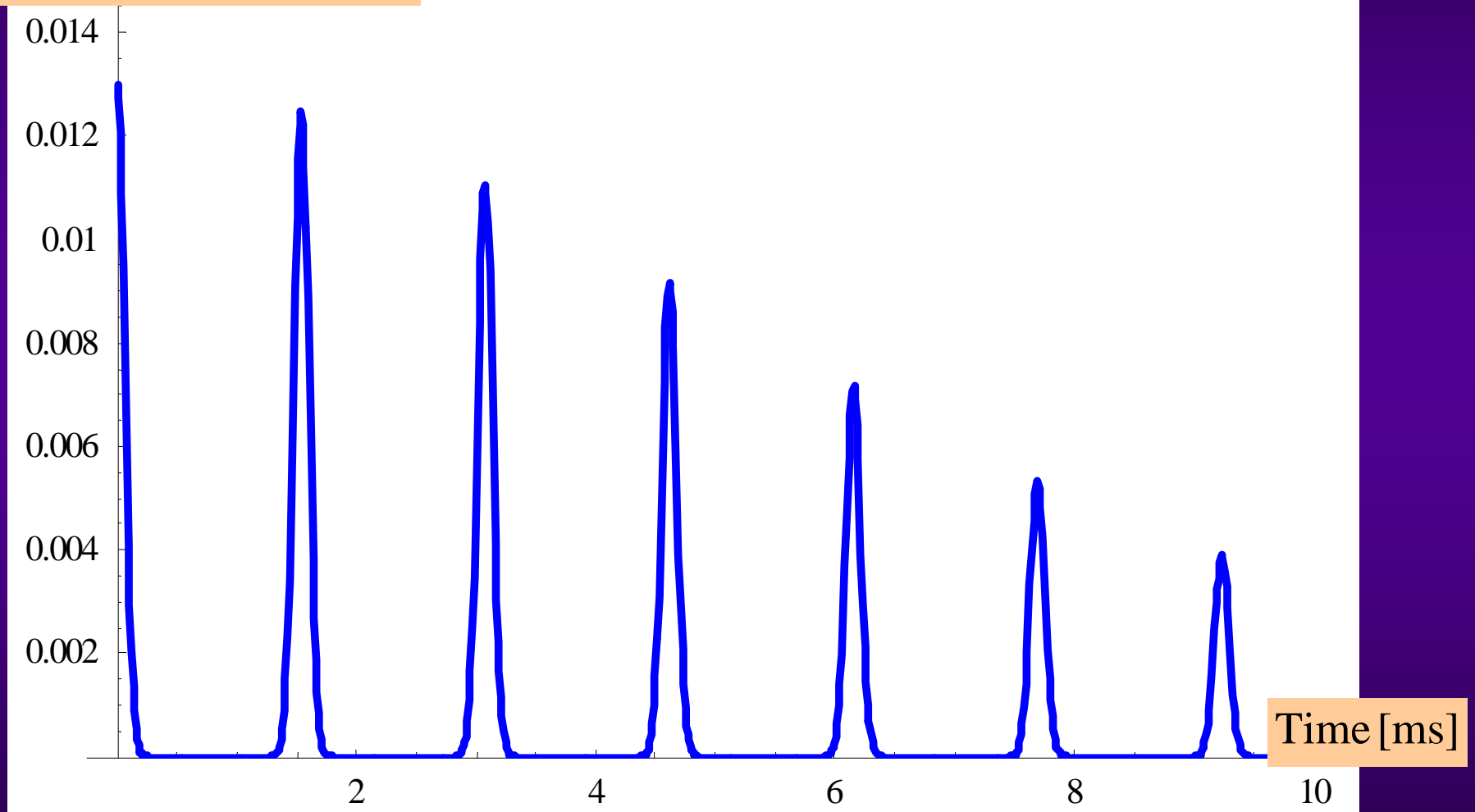
Bunch centroid motion [m]



# EFFECT OF NONLINEAR DETUNING

If detuning from amplitude is  $10^{-5}$

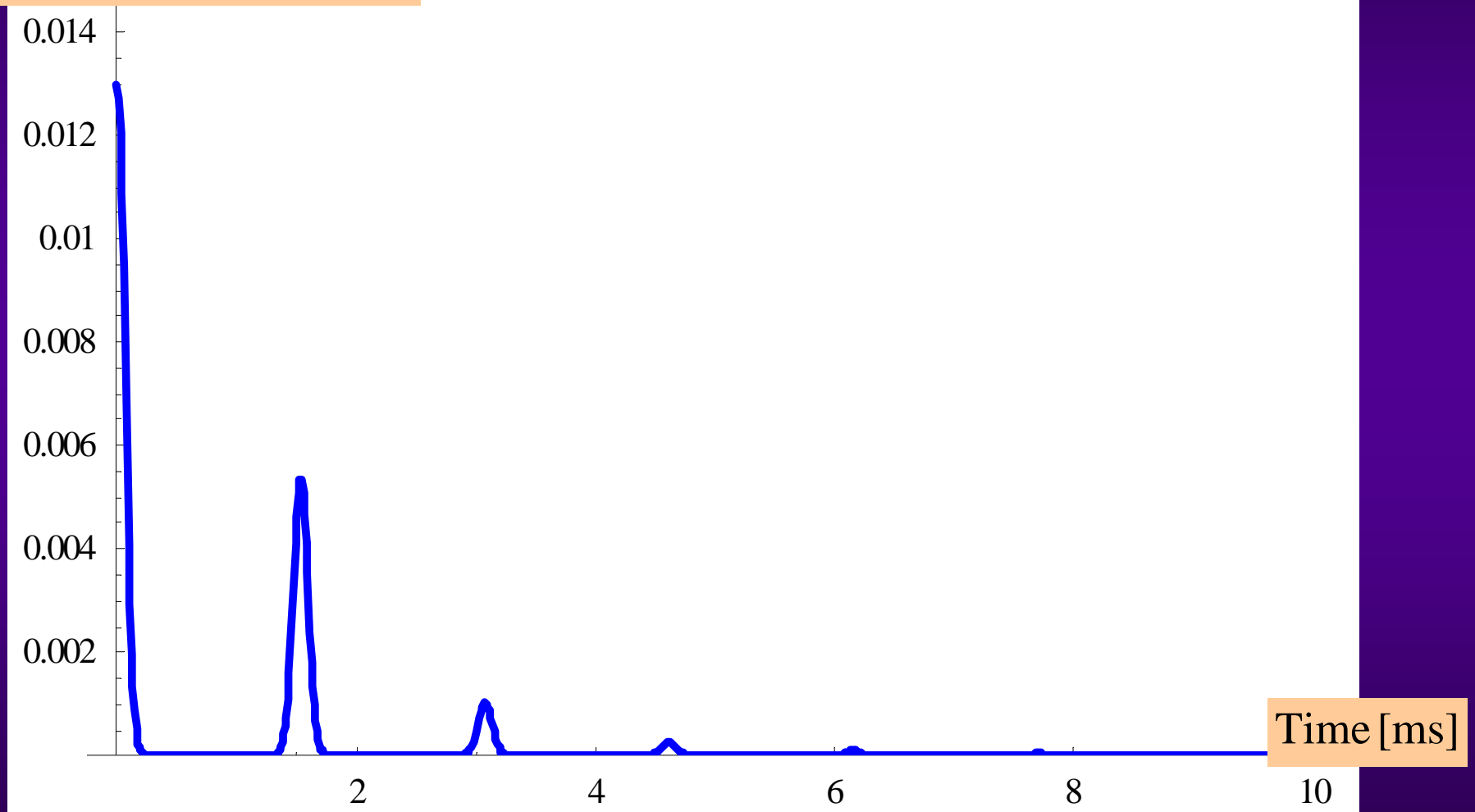
Bunch centroid motion [m]



# EFFECT OF NONLINEAR DETUNING

If detuning from amplitude is  $5 \times 10^{-5}$

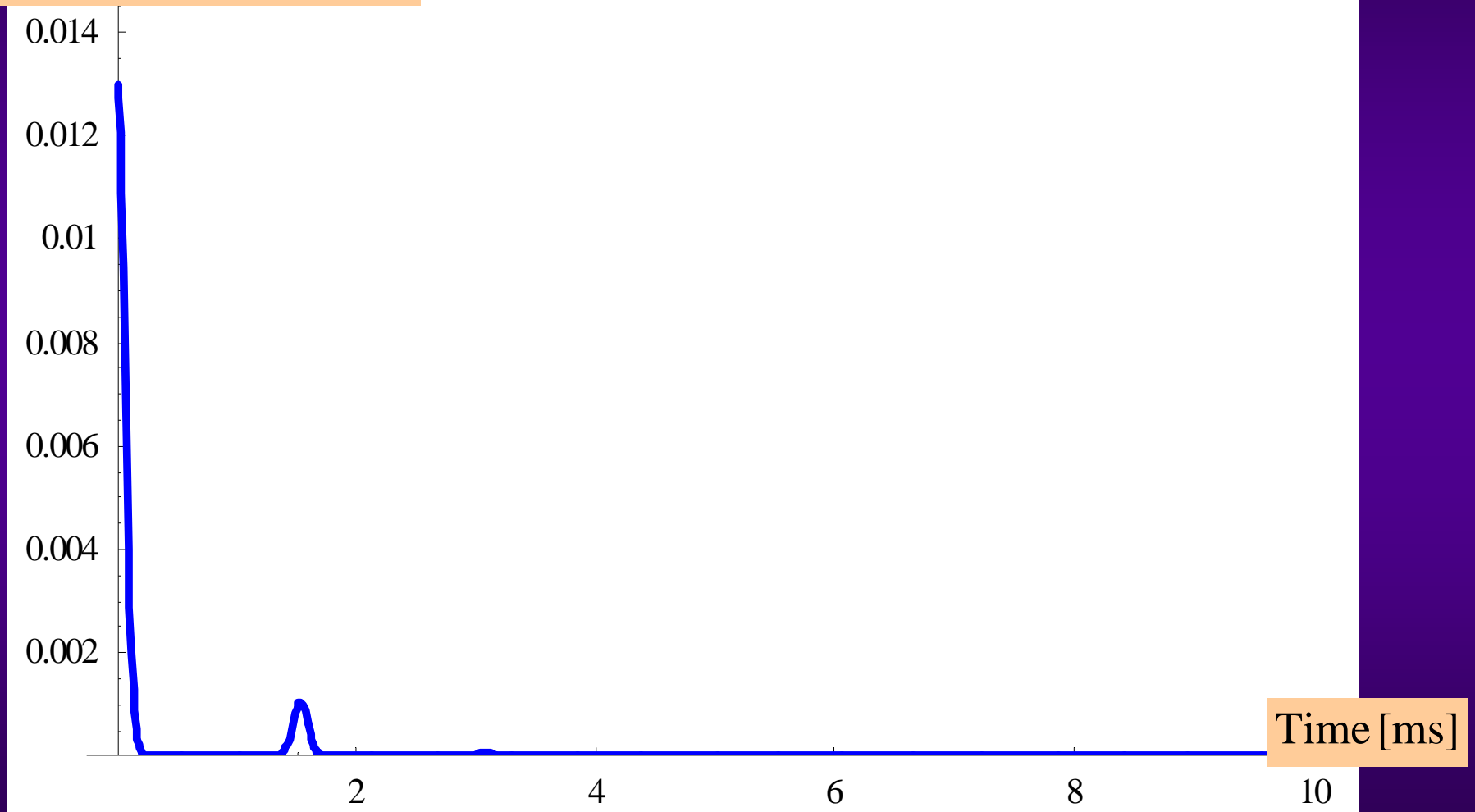
Bunch centroid motion [m]



# EFFECT OF NONLINEAR DETUNING

If detuning from amplitude is  $10^{-4}$

Bunch centroid motion [m]



# EFFECT OF CHROMATICITY AND NONLINEAR DETUNING

If detuning from amplitude is  $5 \times 10^{-5}$  and  $\xi_x \approx -0.2$

Bunch centroid motion [m]

