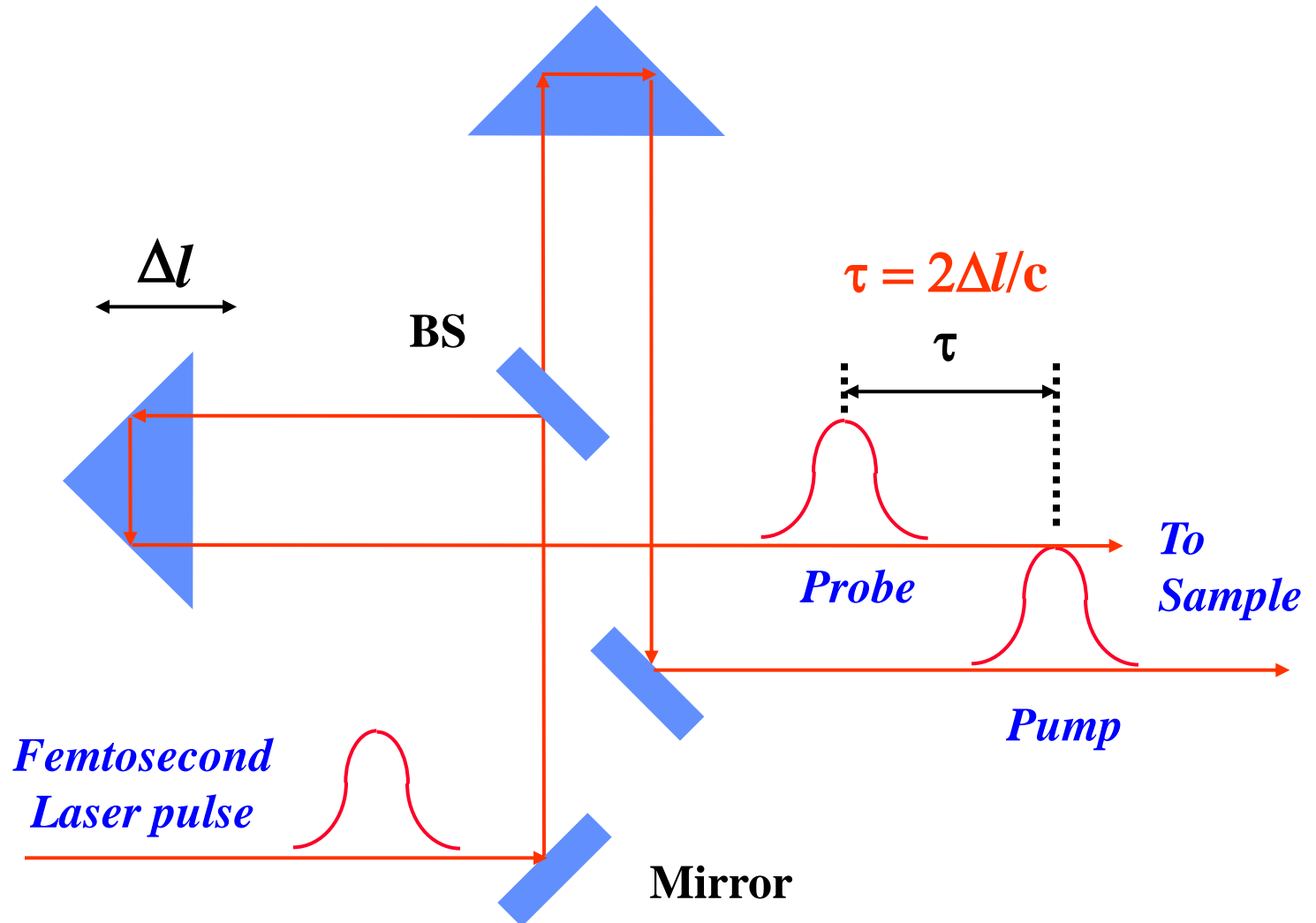
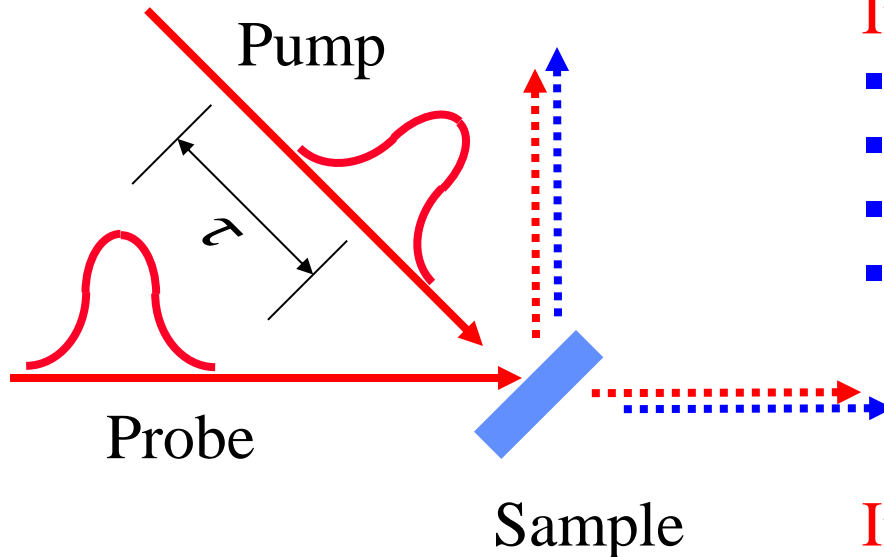


Pump and probe technique



Time-resolved optical measurements



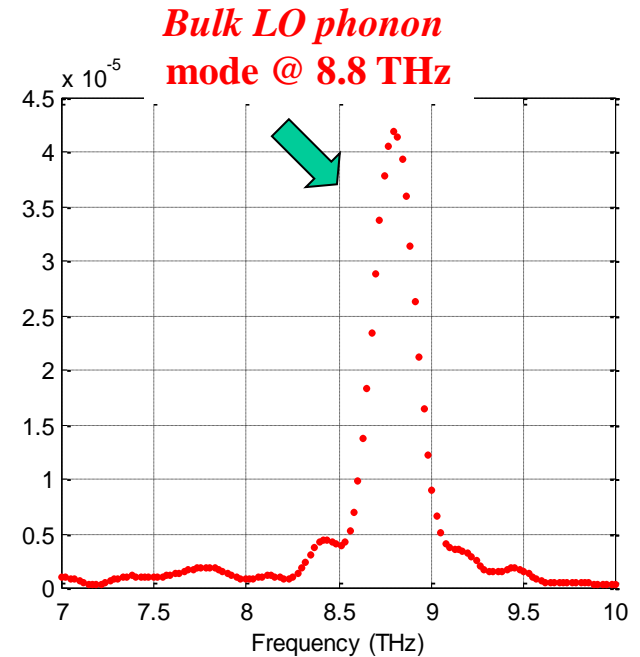
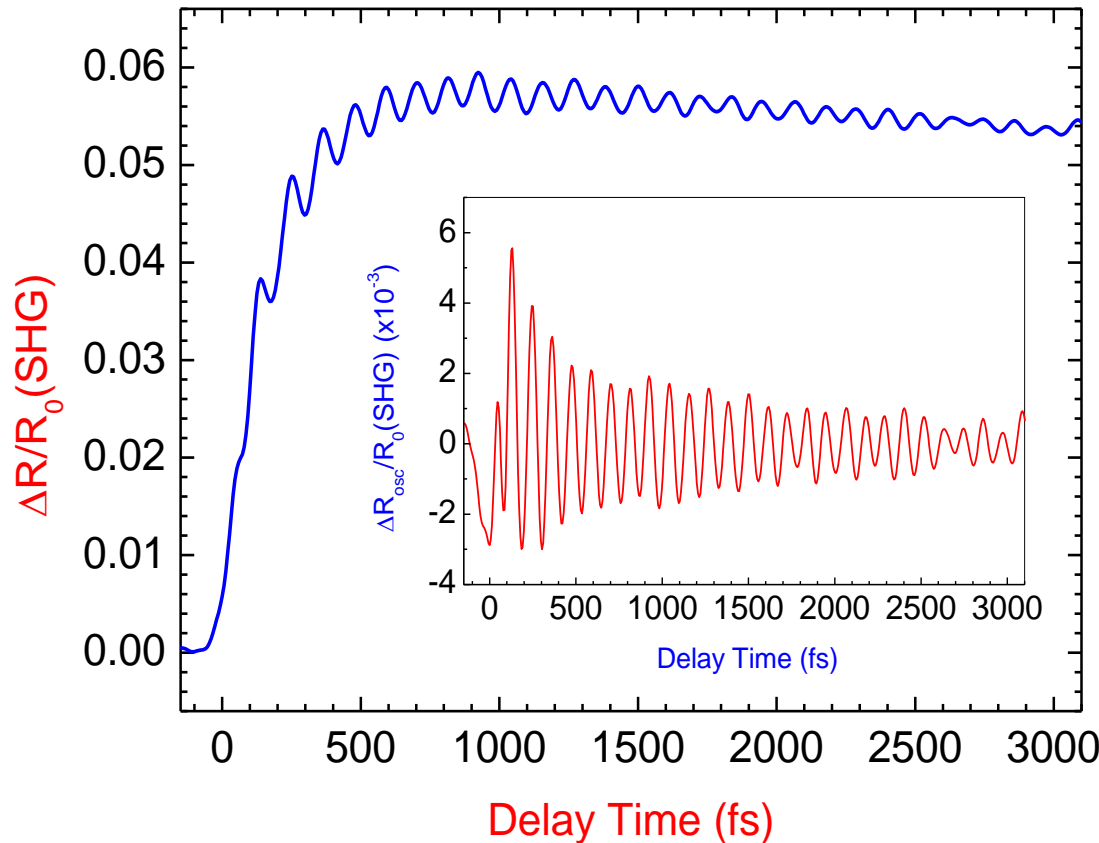
In reflection direction:

- Linear reflectivity
- EO & MO sampling
- Second-harmonic generation
- Nonlinear optical signal

In transmission direction:

- Linear transmission
- EO & MO sampling
- Second-harmonic generation
- Nonlinear optical signal

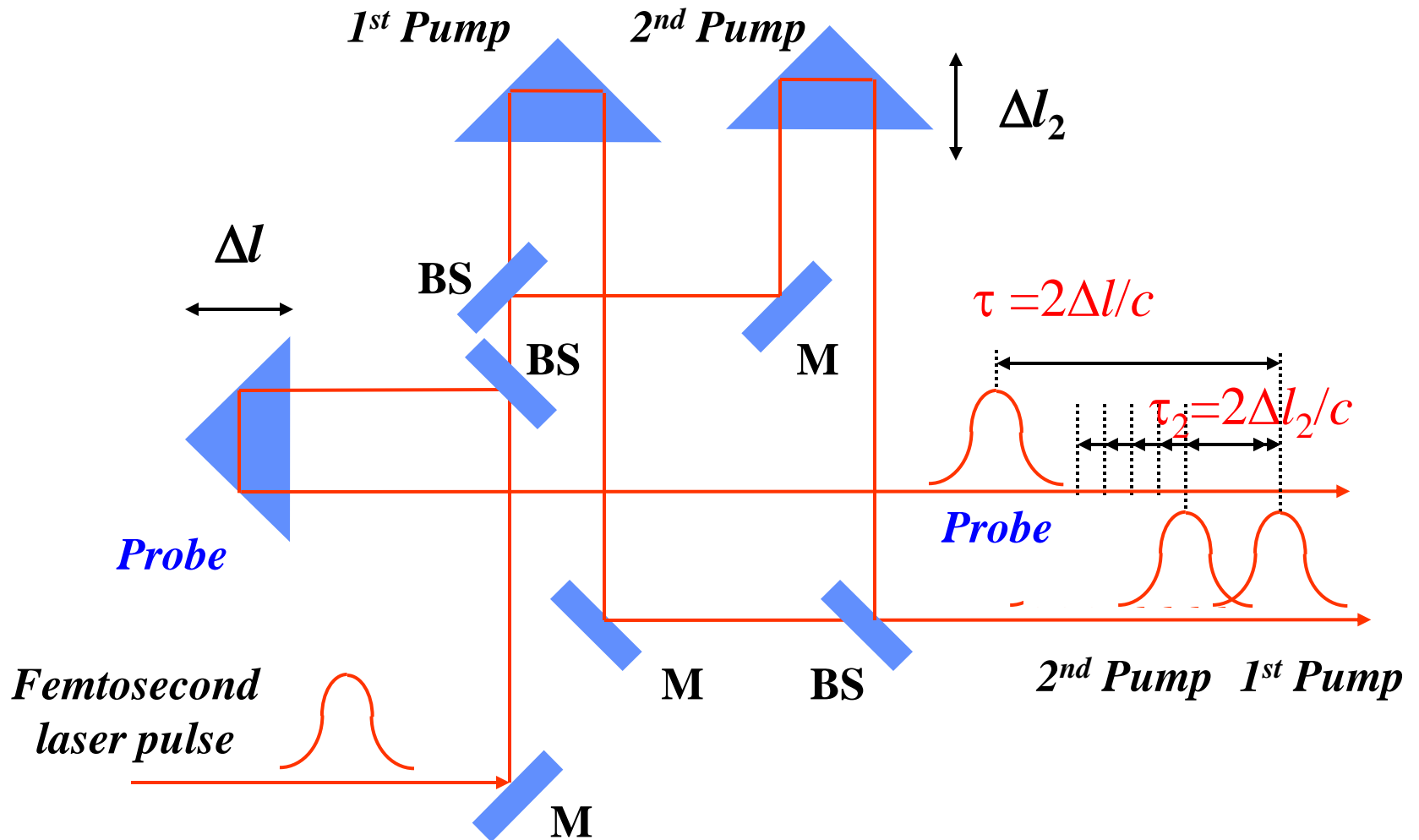
Coherent phonon spectroscopy: GaAs as example



Fourier Power Spectrum

Time-Resolved Second-Harmonic Generation (TRSHG) measurement

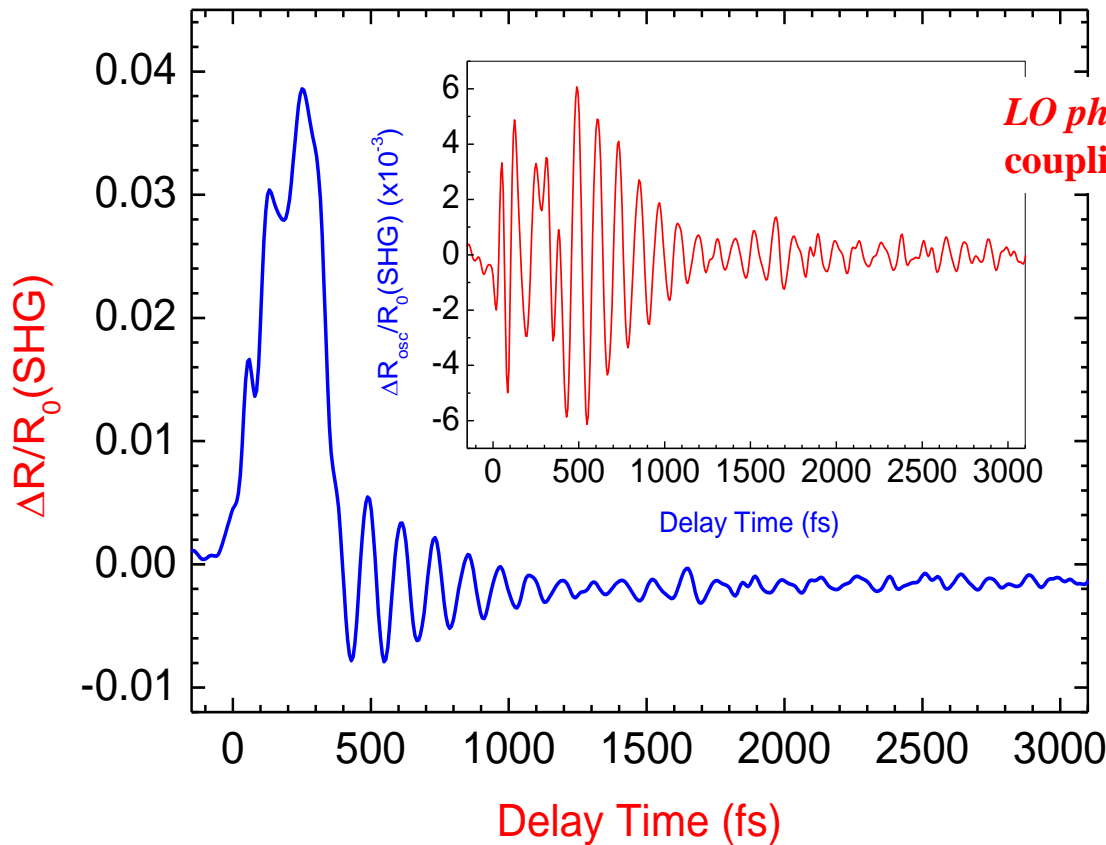
Two-pump and probe technique



2nd pump induced carrier-phonon interaction: GaAs as example

Initial Pump @ 0 fs

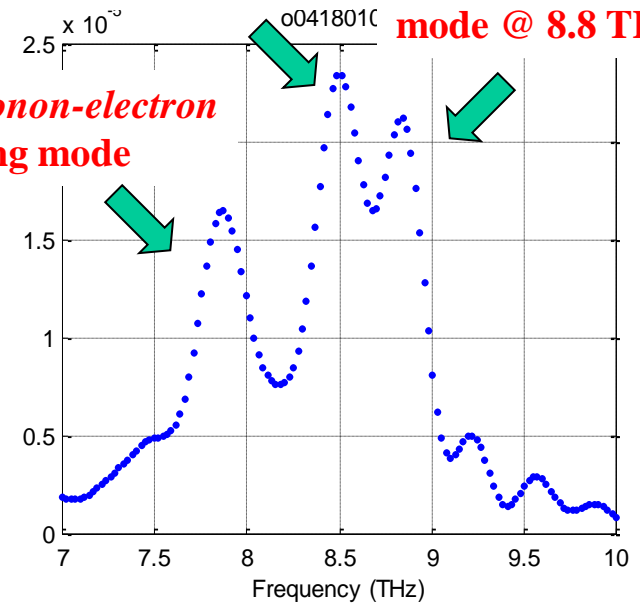
2nd pump @ 330 fs



LO phonon-hole coupling mode

Bulk LO phonon mode @ 8.8 THz

LO phonon-electron coupling mode



Fourier Power Spectrum