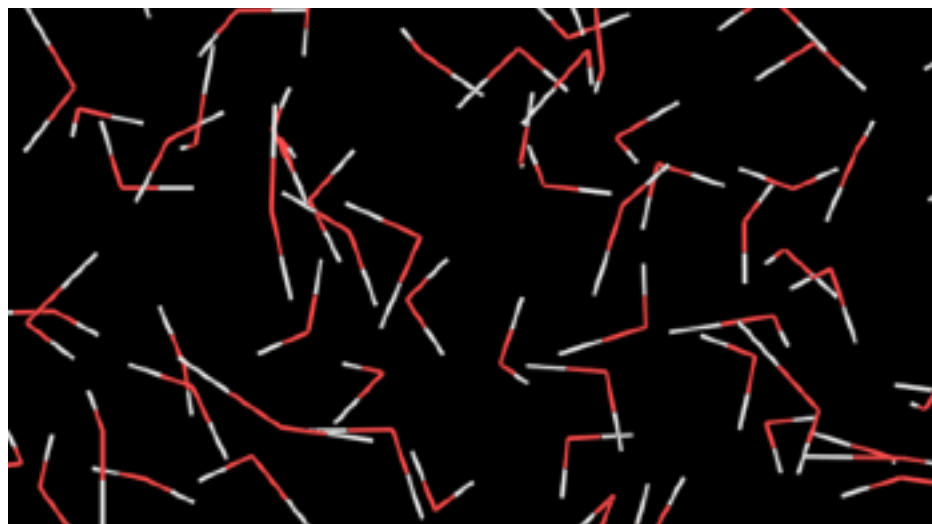
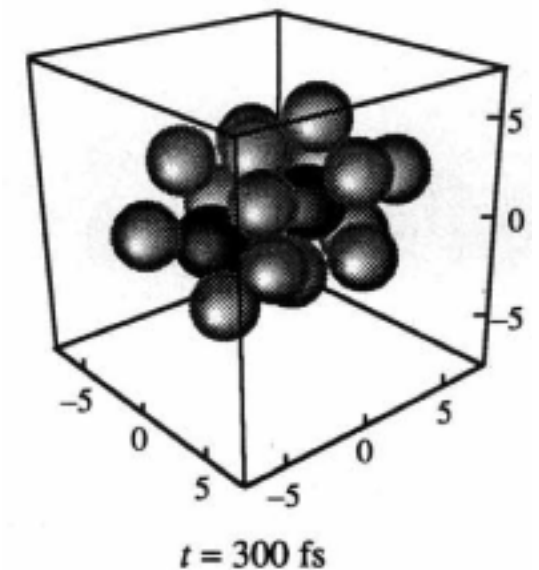


Why quantum dynamics?

Quantum effects can be important,
even with condensed phases or heavy atoms!

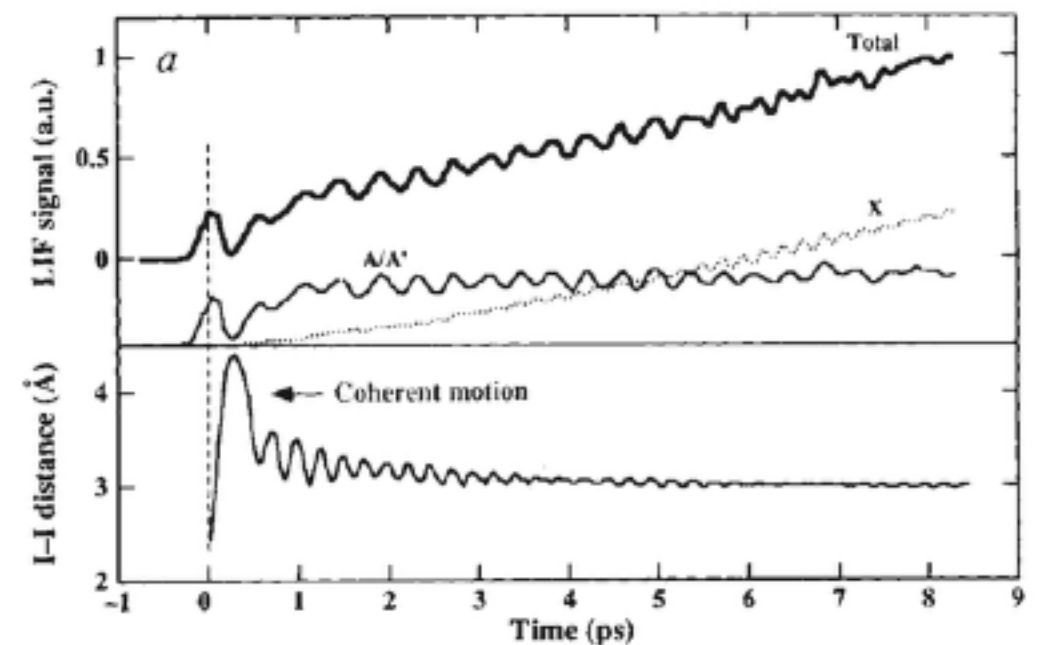
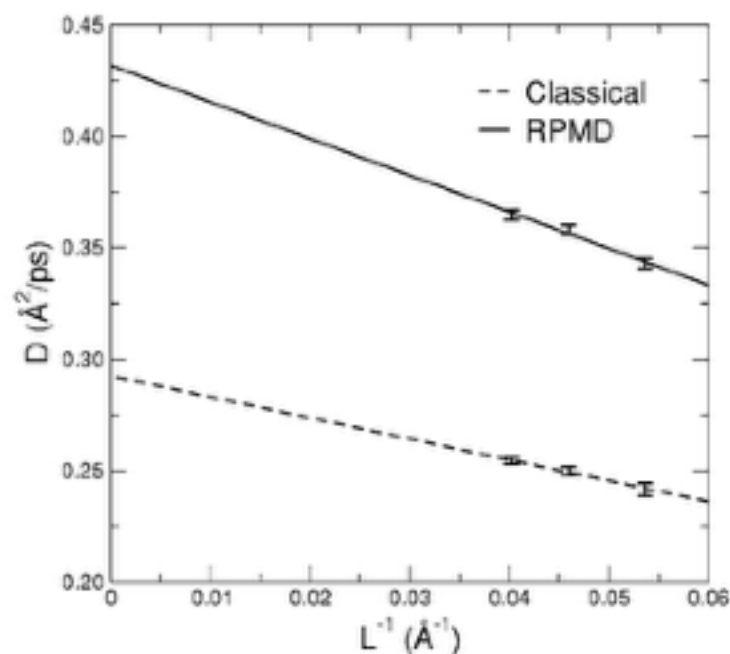


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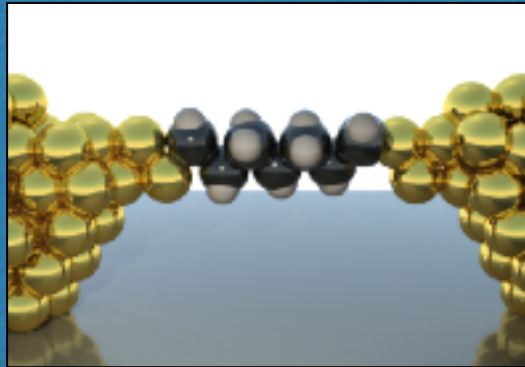


Selfdiffusion

$$D_{QM} \approx 1.5D_{Cl}$$



Two Stories:



Classical mapping for fermions

A new approach to molecular electronics, mapping quantum mechanics to classical dynamics

BINGO

15	19	44	51	63
7	26	36	56	64
12	23	FREE	49	74
8	30	38	58	66
13	29	42	52	73

Bingo sampling

An efficient algorithm for approximate quantum correlation functions, including dynamical quantum interference effects