

## Managing polarisation losses

Hyperpolarised gas tends to lose nuclear magnetisation : **decay** (relaxation) **time**  $T_1$

Origin : fluctuating magnetic interactions

(usually from movement of gas atoms in non-uniform magnetic field  $\mathbf{B}$ )

Reduction : homogeneous  $\mathbf{B}$  over volumes with low-pressure (fast moving) gas

high pressure (slow) gas in regions with poor  $\mathbf{B}$  homogeneity

use selected non-magnetic materials in contact with the gas

Solutions used : gas in contact with glass, selected plastics and ultra-pure fused silica  
specially designed 6-coil magnet (also for NMR measurement)

