Shim Coils: Many shim coils are wound around the sample and current in each coil is varied to add or subtract magnetic field in various spatial patterns:

Axial (Z) Shims: Z, Z^2, Z^3, Z^4, Z^5

Off-Axis (X,Y) Shims: X, Y, XY, X^2-Y^2

Mixed Shims: XZ, XZ^2, YZ, YZ^2

Shimming: Adjusting these shim values (shim currents) corrects for variation in magnetic field within the sample volume, leading to a nearly perfectly homogeneous magnetic field.

As the homogeneity improves, each NMR peak gets narrower and taller.

The ^2H peak of the solvent is used as a criterion. The height of this peak is the "lock level". As each shim is varied, the lock level improves (rises) because the ^2H peak gets narrower and taller.

Spinning the sample tends to remove the inhomogeneities in the X and Y directions. To adjust any shim that involves X or Y you must turn off the spinning.