The chemical shift (symbol: δ; units: ppm) of a nucleus (e.g., \(^1\)H, \(^{13}\)C) in a molecule is a measure of how shielded (see shielded nucleus) or how deshielded (see deshielded nucleus) the nucleus is when the molecule is in an external magnetic field. The higher the chemical shift of a shielded nucleus, the less shielded the nucleus. The higher the chemical shift of a deshielded nucleus, the more deshielded the nucleus. Or, if two nuclei in the same molecule have different chemical shifts, the nucleus with the higher chemical shift is deshielded; the one with the lower chemical shift is shielded.

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**Diagram:**

NMR spectrum showing chemical shift (δ) and ppm.

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**Example:**

methyl acetate (1)

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The shift of \(H_b\) is higher than that of \(H_a\), meaning \(H_b\) is less shielded than \(H_a\), or \(H_b\) is deshielded and \(H_a\) shielded.

see also upfield, downfield

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**Contributors**

- Gamini Gunawardena from the OChemPal site (Utah Valley University)