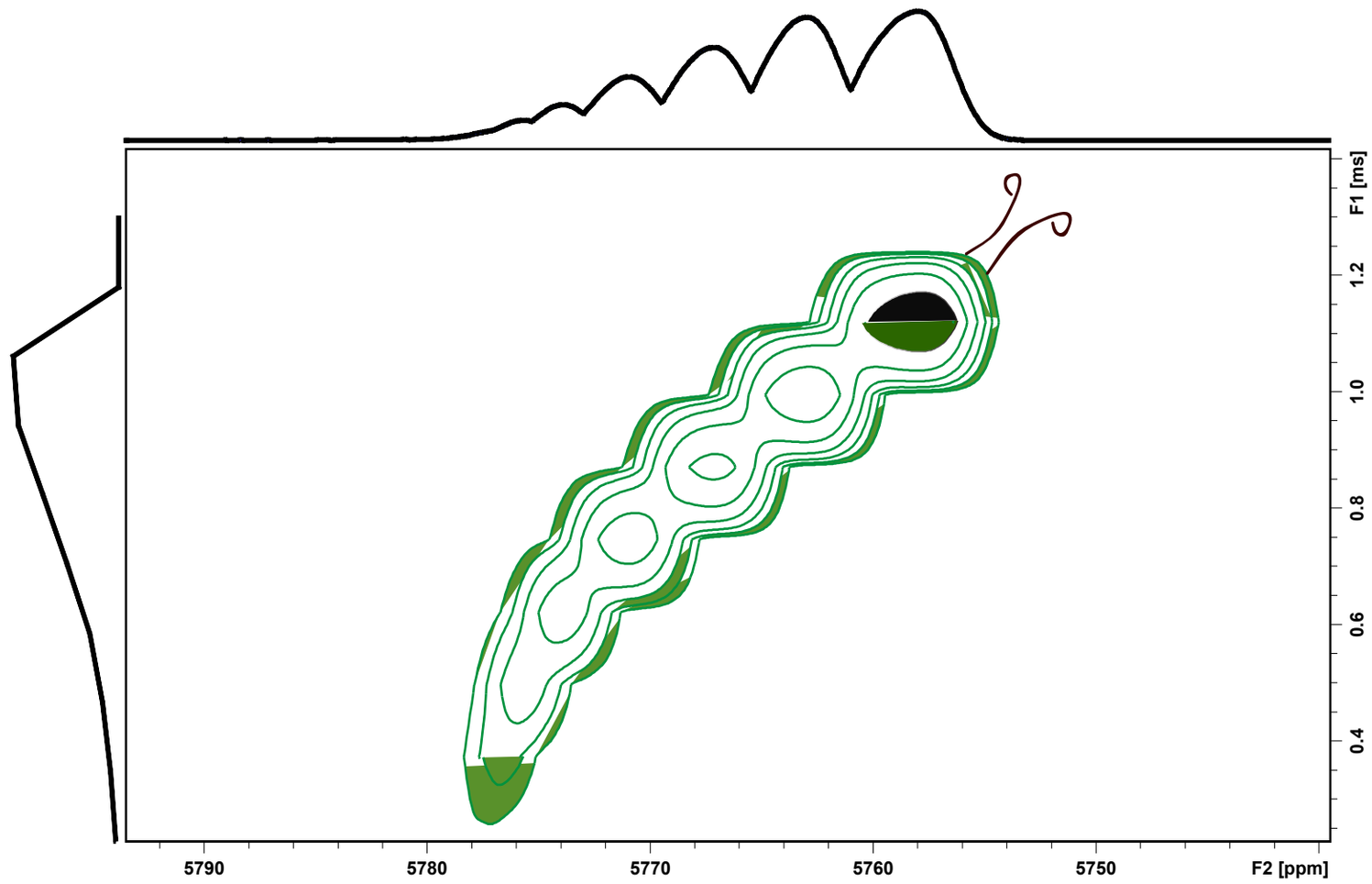
3

NMR is Art



Urea in DNP juice, Bis-Gd complex as polarizing agent

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Field strength: 9.4 Tesla

Why is this your favorite spectrum?

It shows the challenge that is field drift. 9.4 Tesla NMR magnetic is swept to about 9.45 T in order to observe DNP from Gd3+, during an overnight ^{13}C T1 experiment field drifted by 4.9 gauss. 2D plot aptly looks like a caterpillar crawling to lower field.

This is a solid-state NMR DNP experiment with high-spin transition metal Gd3+ as polarizing agent. It requires the field to be swept to higher values by maintaining current in sweep coil. NMR peaks broaden beyond recognition if field drifts significantly during a long experiment. When that happens, precious measurement time is lost.