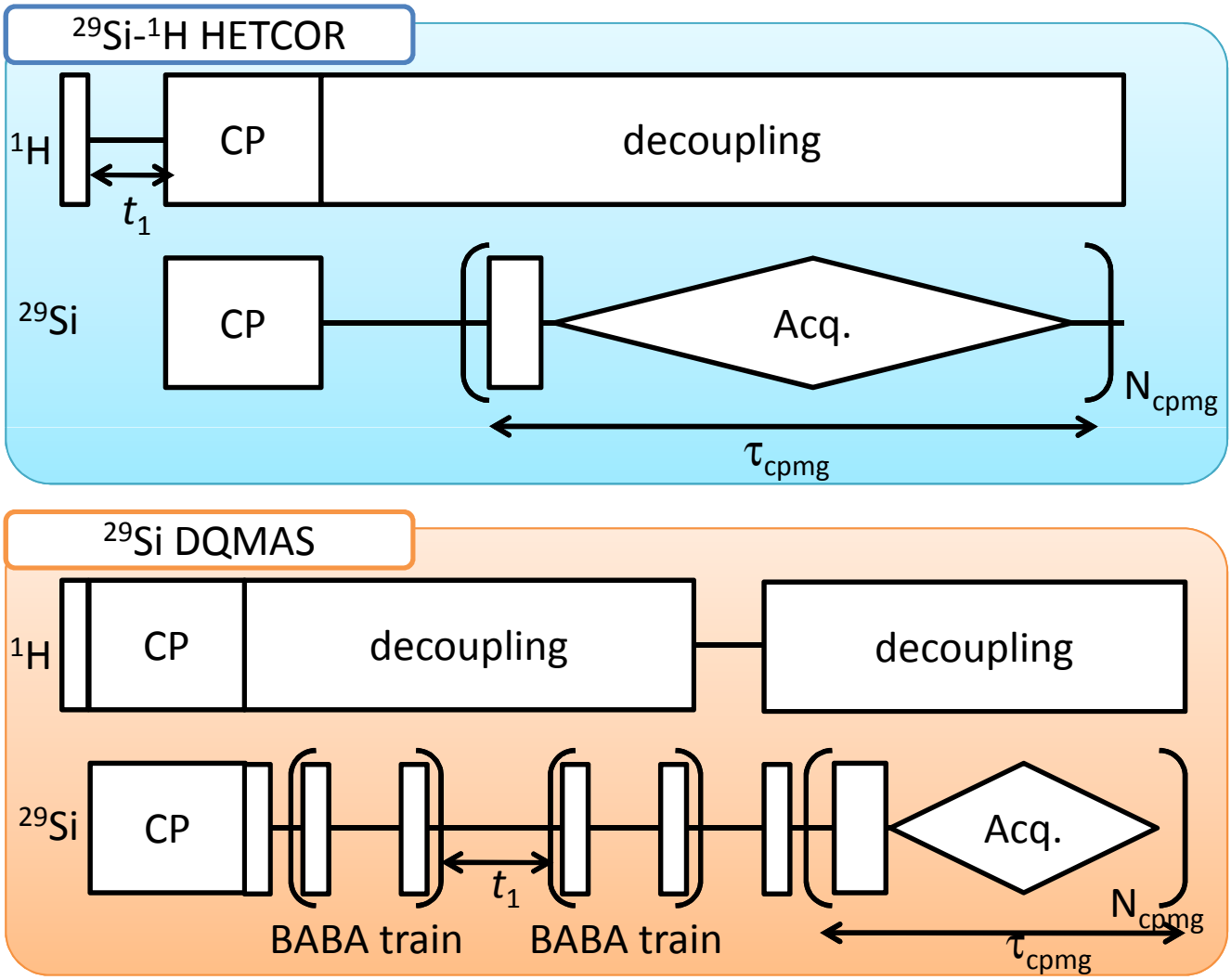
Sensitivity enhancement in ^{29}Si solid-state NMR by CPMG: Application to ^{29}Si-^{1}H HETCOR and ^{29}Si DQMAS

Carr-Purcell-Meiboom-Gill (CPMG) pulse sequence generates a train of echoes which can be summed up, resulting in a great sensitivity enhancement in ^{29}Si NMR. This approach is very effective not only in 1D measurements but also in 2D experiments. The conventional ^{29}Si acquisition in 2D experiments can be replaced by the train of CPMG echoes. This results in 3 to 10 times sensitivity enhancement which corresponds to measurement time reduction of one to two orders of magnitude.



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S.S. Hou, F.L. Beyer, K. Schmidt-Rohr, Solid State Nucl. Magn. Reson. 22 (2002) 110-127.
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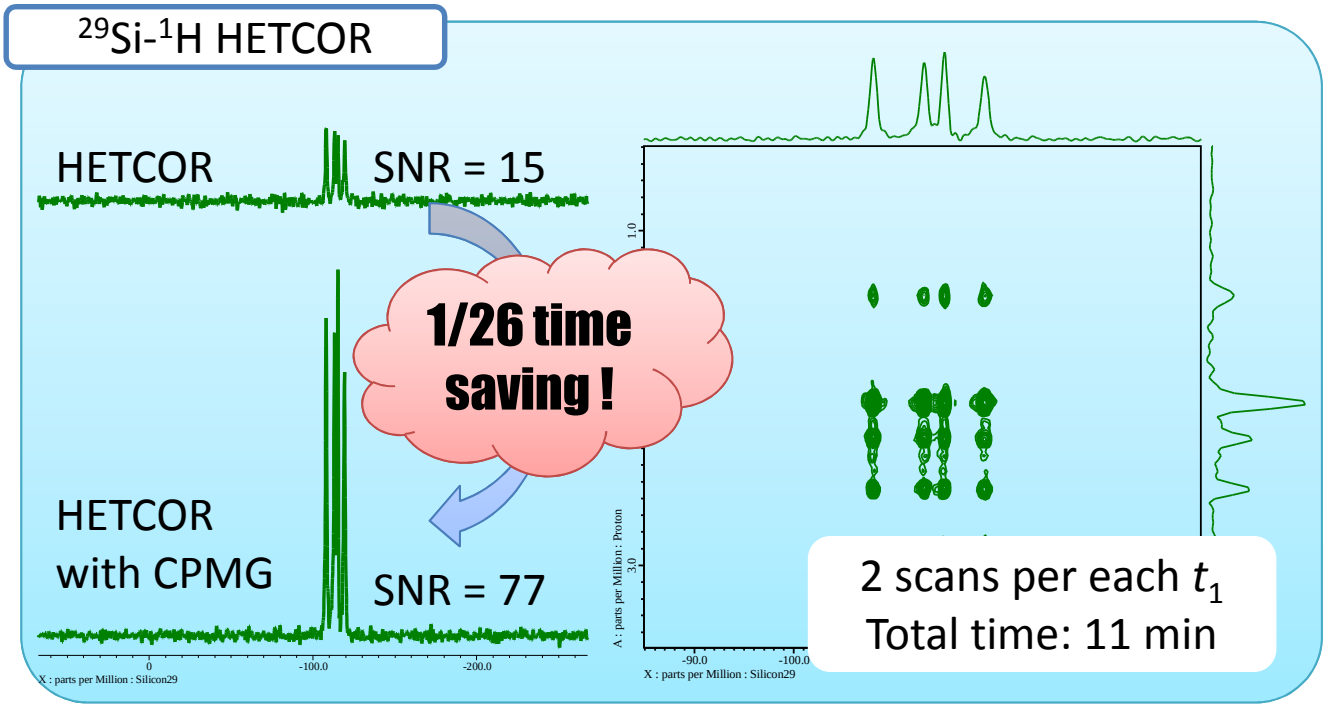
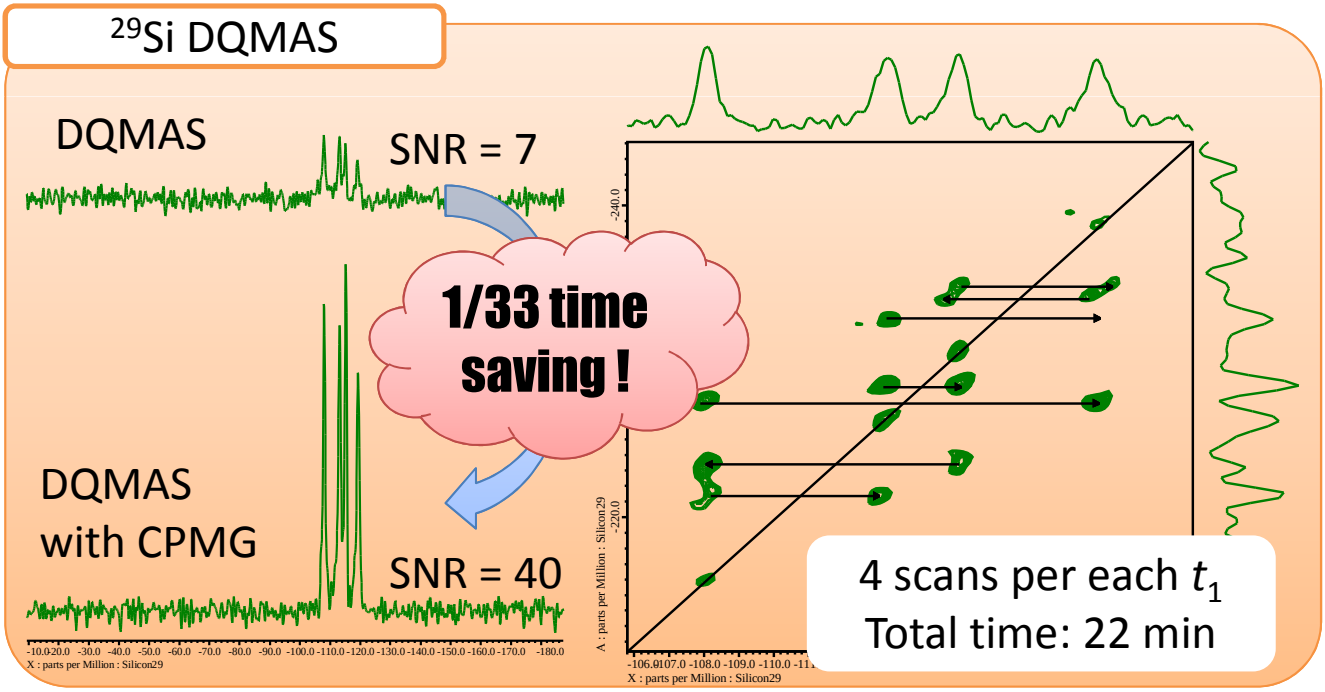
^{29}Si-^{1}H HETCOR



^{29}Si DQMAS



JNM-ECA600 with 3.2 mm HXMAS probe at 20 kHz MAS.
Sample: zeolite sigma-2 (SGT)

Sample courtesy of Prof. Toshiyuki Yokoi of Tokyo Institute of Technology

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