BRUKER
PULSE PROGRAM
CATALOGUE

NMRGuide

T1 & T2 RELAXATION
$^1$H T$_2$ measurements
   As 1D acquisition (cpmg1d)
   As 2D acquisition (cpmg)
   As 1D acquisition with presaturation (cpmgpr1d)

$^1$H T$_1$ measurements:
   As 1D acquisition (t1ir1d)
   As 2D acquisition (t1ir $||$ PROTON1)

T$_1$ $^{13}$C measurements (t1irpg)

Also see: 2D HSQC for Backbone Dynamics
\[ I_z = I_0(1 - 2\exp(-d7/T_1)) \]

\[ \ln(I_0 - I_z) = \ln(2I_0) - d7/T_1 \]

\[ t_{\text{null}} = T_1 \times \ln 2 \]
I

\text{cpmg}

\text{d1} \quad \text{d20} \quad \text{d20}

\text{loop c times}

\text{d1} \quad \text{d20} \quad \text{d20}

\text{loop 14 times}

\text{cpmg1d}

\text{presat} \quad \text{p19}

\text{loop 14 times}

\text{cpmgpr1d}