Supplementary Materials

Study on Nuclear Magnetic Resonance Logging *T*₂ Spectrum Shape Correction of Sandstone Reservoirs in Oil-Based Mud Wells

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Table S1. The value of the coefficient and constant matrix used in the first type of rock in the calibration process.

ai1	ai2	ai3	ai4	ai5	bi
0.365752347	0.858019712	0.229512726	-0.460149893	-0.1841621	-0.176871749
0.598988833	0.70840873	0.747297003	0.133509884	-0.632480086	0.499190336
0.838000525	0.205955701	1.208608981	1.030337093	-1.091720355	1.34206528
1.047085388	-0.427302763	1.327616727	1.737164207	-1.310274278	1.88579423
1.195704473	-0.932418078	1.003644873	1.923045067	-1.183229711	1.865350647
1.260158663	-1.141404299	0.36351085	1.589611499	-0.804850318	1.343354934
1.230596487	-1.025009002	-0.332870094	0.965429012	-0.360331652	0.593650954
1.117536554	-0.674399523	-0.835768881	0.320070135	-0.008267836	-0.08814093
0.95355296	-0.236850109	-1.009644881	-0.175421938	0.18196112	-0.523951831
0.78368456	0.133792074	-0.871278734	-0.452265296	0.197268835	-0.673451464
0.567719065	0.407217492	-0.567708534	-0.350440794	0.082492446	-0.494642584
0.395625278	0.573661248	-0.31215732	-0.170705683	-0.040900636	-0.287373489
0.29079817	0.584507995	-0.120692484	-0.05776005	-0.10965797	-0.145802839
0.220905419	0.457347022	0.00749889	0.015857703	-0.127625848	-0.046324037
0.15039618	0.300110668	0.074570829	0.06074228	-0.11168876	0.022219195
0.07837835	0.136358287	0.060897744	0.056540727	-0.066502532	0.036591808
0.006183281	-0.028771969	-0.017730498	0.009630838	-0.002415313	0.001949996

Table S2. The value of the coefficient and constant matrix used in the second type of rock in the calibration process.

ai1	ai2	ai3	ai4	ai5	bi
0.732733057	-0.308415271	-0.562361701	-0.439306724	-0.305373059	-0.522524694

0.828359794	-0.278931109	-0.689936033	-0.168413809	-0.10377057	-0.61146651
0.902233561	-0.30532734	-0.681862616	0.33661311	0.246771659	-0.568592161
0.997650126	-0.453029403	-0.532194658	0.839711891	0.542813274	-0.426203352
1.129675347	-0.655129677	-0.264650177	1.073901323	0.597120427	-0.249403818
1.264192136	-0.707153404	0.039340959	0.912655641	0.32326474	-0.081785476
1.333837149	-0.4769639	0.308549668	0.405288788	-0.164845429	0.023404922
1.281394908	-0.014779373	0.470979075	-0.214663946	-0.651561702	0.050278634
1.09378232	0.448592463	0.472710623	-0.640001265	-0.930492025	0.025743904
0.810308772	0.647182047	0.31378466	-0.675194647	-0.900687962	-0.000220232
0.502331388	0.478895639	0.136550804	-0.512288908	-0.598608024	-0.00845916
0.260940919	0.086096601	0.004338431	-0.319646427	-0.256871226	0.00303875
0.074327173	-0.129307844	-0.030534874	-0.085025852	0.012711052	0.105820445
-0.038298226	-0.099155406	0.008631921	0.09176313	0.141612906	0.215527968
-0.071198275	0.012876782	0.057838958	0.127419155	0.17070866	0.205491446
-0.05021581	0.041959142	0.057941864	0.0814442	0.113422014	0.120976933
-0.002389307	0.020466674	0.038832504	-0.006891351	0.00265519	-0.009771921

Table S3. The value of the coefficient and constant matrix used in the third type of rock in the calibration process.

ai1	ai2	ai3	ai4	ai5	bi
0.538048146	1.220847825	-0.363662739	0.357904722	0.070452603	-0.512262961
0.620606386	0.820909322	-0.165371292	0.136170798	0.21089004	-0.530971577
0.700597386	0.298198043	0.079991733	-0.051379413	0.381192447	-0.497945127
0.757881655	-0.158463133	0.310505619	-0.120652126	0.547307661	-0.356877069
0.759021661	-0.499692616	0.529912929	-0.022734719	0.710936337	-0.014155543
0.713179493	-0.654869286	0.658471291	0.171336085	0.794518594	0.393831086
0.629647607	-0.67601986	0.668690627	0.348640871	0.771720599	0.726501065
0.524099608	-0.657051822	0.575292971	0.411834955	0.653597041	0.872564735
0.414345537	-0.666397502	0.425756471	0.326920408	0.489469458	0.788898073
0.314156967	-0.748638702	0.287939592	0.131437167	0.366728079	0.521223539
0.196088916	-0.712011031	0.212181302	0.006844433	0.323048994	0.236632148
0.140994103	-0.622963918	0.106984716	-0.076521121	0.216411515	-0.016731354
0.129565371	-0.392849974	-0.025511549	-0.131320071	0.052248034	-0.170601259
0.14102767	-0.171978612	-0.135946769	-0.168064351	-0.118219433	-0.223202062
0.130973189	-0.049957972	-0.159289035	-0.144412714	-0.192471423	-0.195049904
0.078566374	0.040946699	-0.120001026	-0.048201625	-0.153474684	-0.106199889
-0.006780582	0.095210475	-0.024914475	0.072282708	-0.026695097	0.026770292

Table S4. The value of the coefficient and constant matrix used in the fourth type of rock in the calibration process.

ai1	ai2	ai3	ai4	ai5	bi

0.445472406	0.115348867	0.312876307	0.298375076	0.461635184	1.373136171
0.447366732	0.253111398	0.276543012	0.546833767	0.516466185	1.218225784
0.415640046	0.428887161	0.25496218	0.828208999	0.549649994	1.102356837
0.344230461	0.583551258	0.278282407	1.14783261	0.571914642	1.167497689
0.256475545	0.581258252	0.336797714	1.441385085	0.615156127	1.378214339
0.183562831	0.306672884	0.488979121	1.515117841	0.724570148	1.555483979
0.135759046	-0.04962297	0.617852148	1.35129623	0.762860786	1.661939717
0.108620537	-0.28023677	0.599191799	1.045409563	0.688063405	1.591781143
0.096151316	-0.303560322	0.428464734	0.691952537	0.499153568	1.28929903
0.086455658	-0.221767819	0.222762612	0.389982067	0.232394805	0.866585608
0.076217534	-0.180463224	0.095123174	0.15304516	0.042960974	0.421799014
0.070538847	-0.151337942	0.039959101	-0.023370042	-0.062323576	0.061512823
0.083175598	-0.157108991	-0.010413104	-0.119734253	-0.077216844	-0.186473867
0.101412696	-0.191404598	-0.037768275	-0.178938184	-0.03465123	-0.323113776
0.097109037	-0.162233272	-0.036572532	-0.193481543	-0.015655505	-0.31935693
0.063787346	-0.078827545	-0.011671852	-0.143184062	0.008097792	-0.221217406
-0.005017022	0.077338286	0.031840168	-0.010114646	0.032724194	-0.036100768