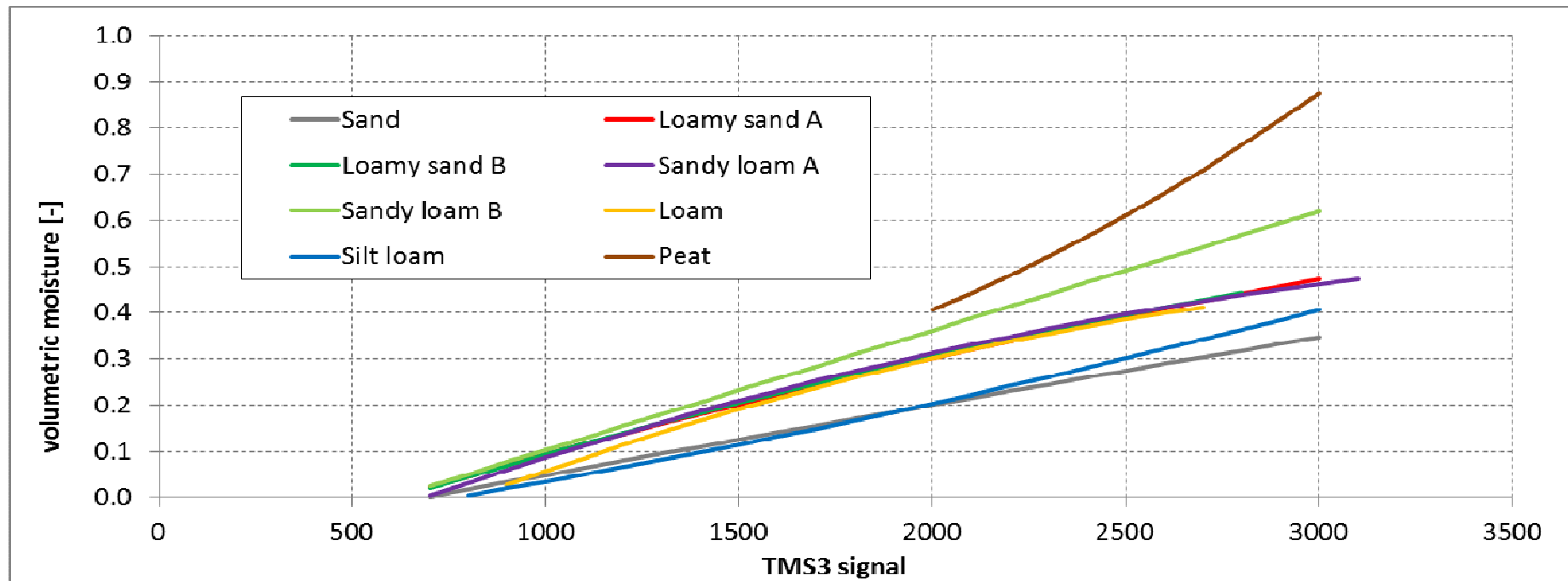


Calibration set for typical soils

soil class	location (Czech R.)	clay (%)	silt (%)	sand (%)	ρ [g/cm ³]	parameters for calibration quadratic curve		
						a	b	c
Sand	Střeleč	0.0	0.0	100.0	1.52	-3.00E-9	1.61E-4	-1.10E-1
Loamy sand A	Uhlířská A	3.2	24.9	71.9	0.52	-1.90E-8	2.66E-4	-1.54E-1
Loamy sand B	Uhlířska B	5.3	28.2	66.5	0.97	-2.30E-8	2.82E-4	-1.67E-1
Sandy loam A	Kopaninský	5.1	33.7	61.2	1.32	-3.80E-8	3.39E-4	-2.15E-1
Sandy loam B	Liz	7.6	35.7	56.8	1.07	-9.00E-10	2.62E-4	-1.59E-1
Loam	Podolí	24.1	28.5	47.4	1.55	-5.10E-8	3.98E-4	-2.91E-1
Silt loam	Nučice	13.0	66.0	21.0	1.29	1.70E-8	1.18E-4	-1.01E-1
Peat	Jizera Mts				0.10	1.23E-7	-1.45E-4	2.03E-1



Sand Štřeleč

volumetric moisture	TMS3 number:	21	22	23	24	25	TMS3 pulses average
	0.000	Signal	686	732	670	692	686
		684	729	674	685	682	
σ		1.414	2.121	2.828	4.950	2.828	
Average		685	731	672	689	684	692.00

0.015	Signal	739	759	748	728	736	
		744	756	731	723	735	
	σ	3.536	2.121	12.021	3.536	0.707	
	Average	742	758	740	726	736	739.90

0.044	Signal	966	1011	979	990	981	
		1013	1033	1030	990	1034	
	σ	33.234	15.556	36.062	0.000	37.477	
	Average	990	1022	1005	990	1008	1002.70

0.074	Signal	1221	1231	1200	1191	1218	
		1241	1308	1217	1226	1228	
	σ	14.142	54.447	12.021	24.749	7.071	
	Average	1231	1270	1209	1209	1223	1228.10

0.124	Signal	1421	1544	1413	1440	1590	
		1502	1542	1563	1551	1560	
	σ	57.276	1.414	106.066	78.489	21.213	
	Average	1462	1543	1488	1496	1575	1512.60

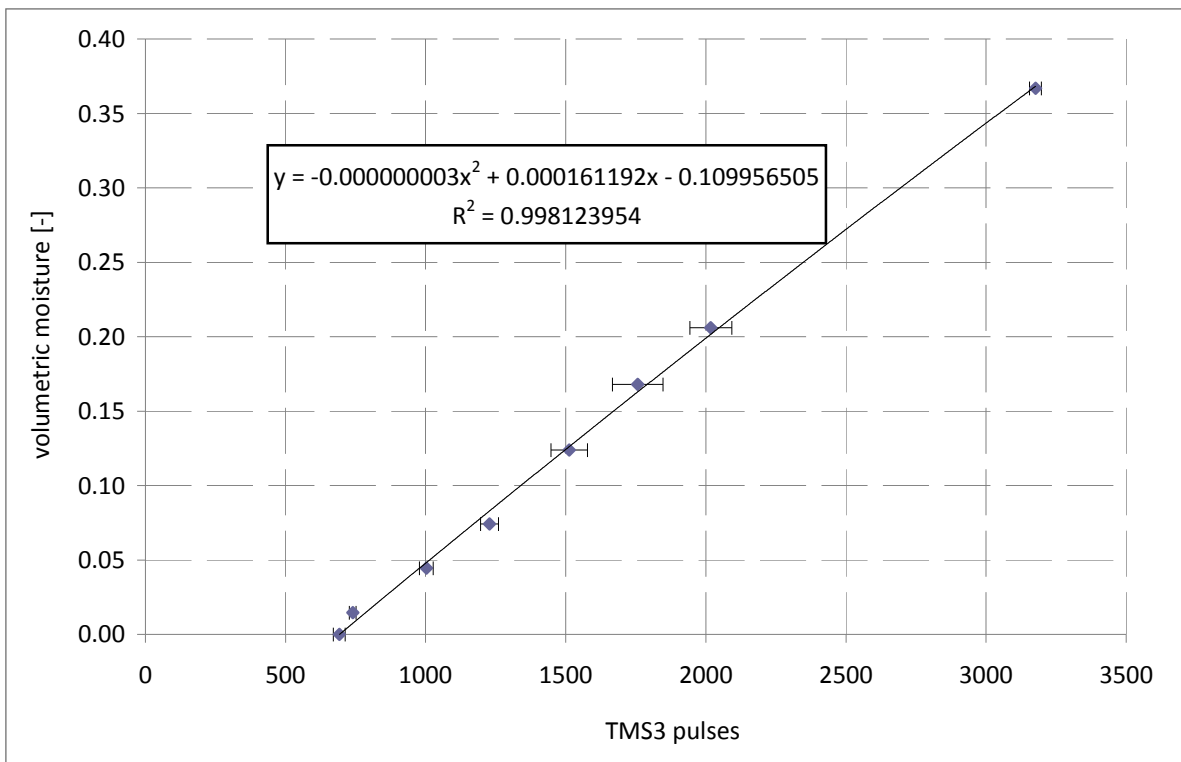
0.168	Signal	1701	1829	1616	1710	1638	
		1848	1936	1726	1742	1796	
		1701	1770	1710	1730	1900	
	σ	84.870	84.149	59.431	16.166	131.924	
	Average	1750	1845	1684	1727	1778	1756.87

0.206	Signal	1917	2030	1912	1991	1988	
		1956	2078	2040	2135	2169	
		1930	1998	2016	2065	2040	
	σ	19.858	40.266	68.039	72.009	93.190	
	Average	1934	2035	1989	2064	2066	2017.67

0.367	Signal	3152	3178	3152	3173	3168		
	Saturation		3154	3165	3161	3205		3185
			3171	3191	3163	3212		3216
		σ	10.440	13.000	5.859	20.793		24.338
	Average	3159	3178	3159	3197	3190	3176.55	

soil class	location (Czech R.)	clay (%)	silt (%)	sand (%)	ρ [g/cm ³]
Sand	Střeleč	0.0	0.0	100.0	1.52

parameters for calibration quadratic curve		
a	b	c
-3.00E-9	1.61E-4	-1.10E-1



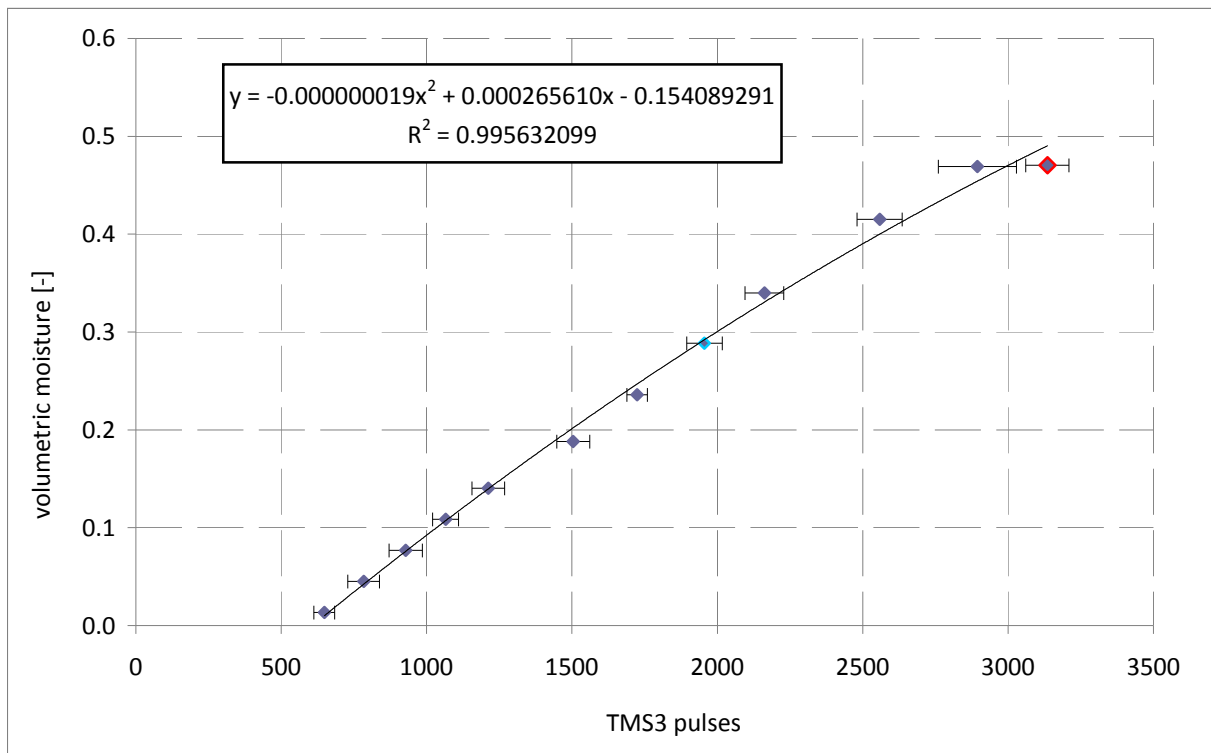
Loamy sand A

Uhlířská A

volumetric moisture	TMS3 number:						TMS3 pulses average
		21	22	23	24	25	
0.013	Signal	627	668	601	721	643	
		619	658	628	688	628	
	σ	5.657	7.071	19.092	23.335	10.607	
	Average	623	663	615	705	636	
0.045	Signal	781	829	715	855	786	
		765	799	679	844	782	
	σ	11.314	21.213	25.456	7.778	2.828	
	Average	773	814	697	850	784	
0.077	Signal	925	956	836	1001	935	
		912	940	862	1024	891	
	σ	9.192	11.314	18.385	16.263	31.113	
	Average	919	948	849	1013	913	
0.109	Signal	1118	1114	1004	1090	1032	
		1030	1095	998	1093	1078	
	σ	62.225	13.435	4.243	2.121	32.527	
	Average	1074	1105	1001	1092	1055	
0.140	Signal	1169	1198	1109	1228	1230	
		1232	1237	1157	1308	1252	
	σ	44.548	27.577	33.941	56.569	15.556	
	Average	1201	1218	1133	1268	1241	
0.188	Signal	1567	1503	1427	1552	1534	
		1432	1559	1450	1557	1461	
	σ	95.459	39.598	16.263	3.536	51.619	
	Average	1500	1531	1439	1555	1498	
0.236	Signal	1717	1660	1750	1748	1754	
		1677	1771	1708	1743	1713	
	σ	28.284	78.489	29.698	3.536	28.991	
	Average	1697	1716	1729	1746	1734	
0.288	Signal	2051	1916	1874	2034	1952	
		2002	1931	1883	1989	1925	
	σ	34.648	10.607	6.364	31.820	19.092	
	Average	2027	1924	1879	2012	1939	
0.340	Signal	2099	2210	2267	2138	2152	
		2089	2116	2095	2254	2201	
	σ	7.071	66.468	121.622	82.024	34.648	
	Average	2094	2163	2181	2196	2177	

soil class	location (Czech R.)	clay (%)	silt (%)	sand (%)	ρ [g/cm ³]
Loamy sand	Uhlířská A	3.2	24.9	71.9	0.52

parameters for calibration quadratic curve		
a	b	c
-1.90E-8	2.66E-4	-1.54E-1



0.415	Signal	2688	2560	2439	2517	2601	
		2523	2574	2451	2615	2617	
	σ	116.673	9.899	8.485	69.296	11.314	
	Average	2606	2567	2445	2566	2609	2558.50

0.469	Signal	2757	2906	2630	2975	3031	
		2934	3015	2756	2942	2996	
	σ	125.158	77.075	89.095	23.335	24.749	
	Average	2846	2961	2693	2959	3014	2894.20

0.470	Signal	3202	3216	3088	3193	3224	
	Saturation	3085	3140	2995	3084	3126	
	σ	82.731	53.740	65.761	77.075	69.296	
	Average	3144	3178	3042	3139	3175	3135.30

Loamy sand B

Uhlířská B

volumetric moisture	TMS3 number						TMS3 pulses average
		21	22	23	24	25	
0.029	Signal	735	724	717	747	791	
		776	685	739	766	755	
		733	683	708	745	750	
	σ	24.269	23.116	15.948	11.590	22.368	
	Average	748	697	721	753	765	736.93

0.124	Signal	1138	1170	1041	1165	1154	
		1077	1154	1106	1148	1112	
		1096	1180	1123	1083	1188	
	σ	31.214	13.115	43.278	43.278	38.070	
	Average	1104	1168	1090	1132	1151	1129.00

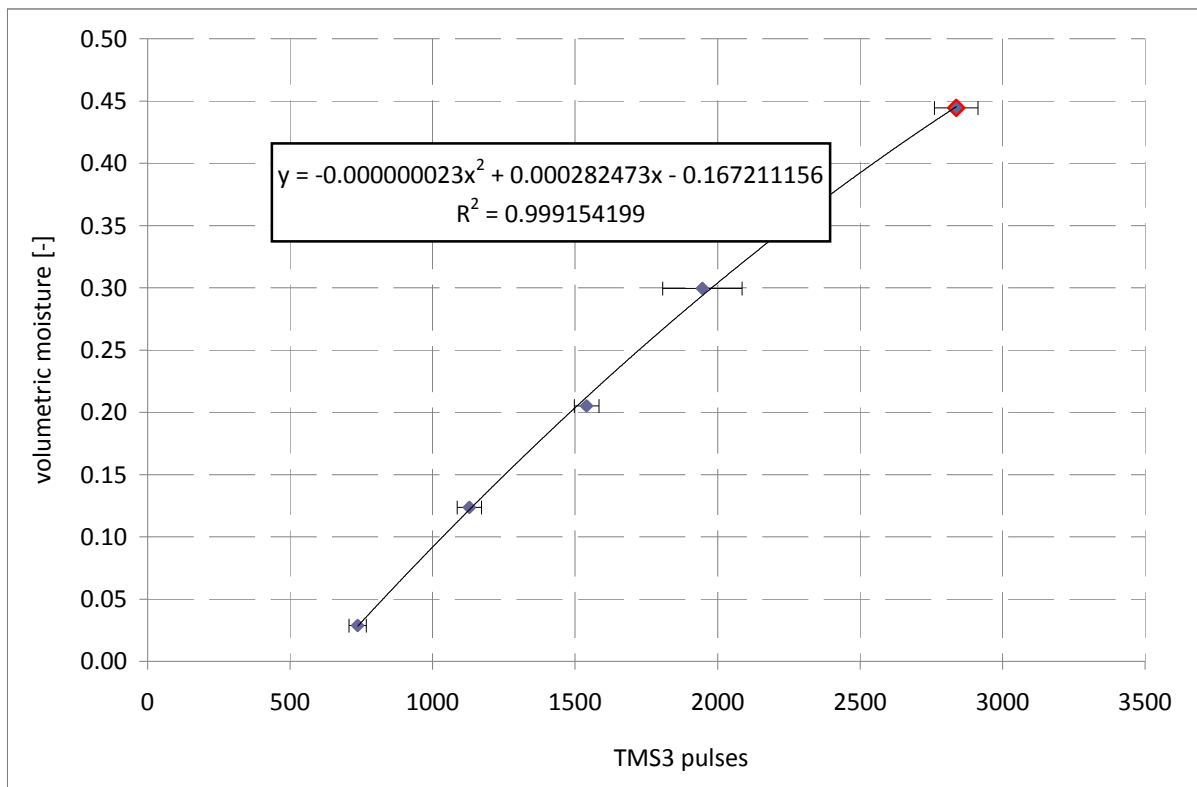
0.205	Signal	1586	1596	1481	1516	1589	
		1550	1564	1487	1506	1577	
		1483	1579	1526	1490	1575	
	σ	52.272	16.010	24.434	13.115	7.572	
	Average	1540	1580	1498	1504	1580	1540.33

0.300	Signal	1942	2048	1837	1644	2088	
		2004	2309	1892	1960	1898	
		2045	1761	1921	2058	1892	
			1823	1951	1930	1937	
	σ	51.856	248.572	48.562	177.936	91.697	
	Average	1997	1985	1900	1898	1954	1946.85

0.444	Signal	2863	2785	2784	2768	2898	
		2906	2737	2841	2872	2850	
		3013	2705	2823	2886	2830	
		σ	77.242	40.266	29.138	64.467	
		Average	2927	2742	2816	2842	

soil class	location (Czech R.)	clay (%)	silt (%)	sand (%)	ρ [g/cm ³]
Loamy sand	Uhlířska B	5.3	28.2	66.5	0.97

parameters for calibration quadratic curve		
a	b	c
-2.30E-8	2.82E-4	-1.67E-1



Sandy loam A

Kopaninský

volumetric moisture	TMS3 number:	21	22	23	24	25	TMS3 pulses average

0.029	Signal	814	824	795	809	829	
		828	816	778	822	827	
		801	821	777	819	842	
	σ	13.503	4.041	10.116	6.807	8.145	
	Average	814	820	783	817	833	

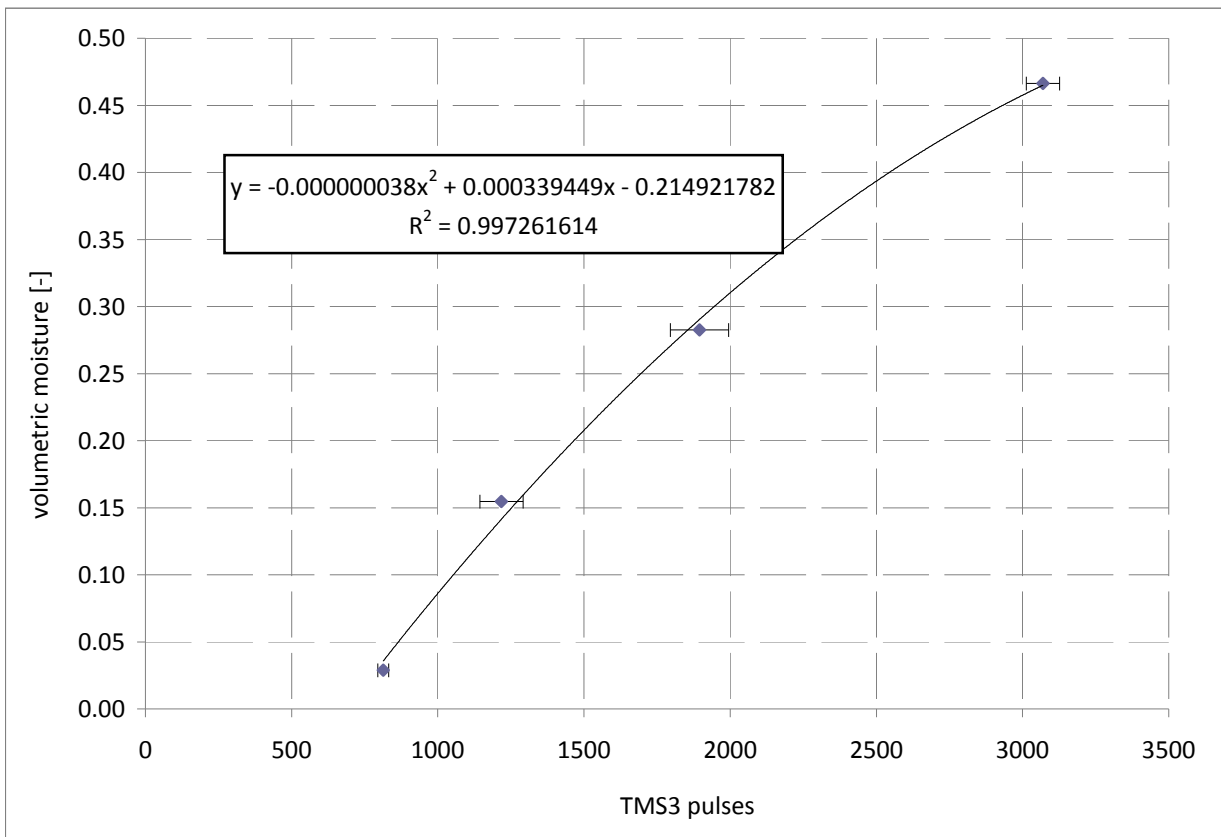
0.155	Signal	1078	1285	1223	1125	1224	
		1196	1326	1266	1080	1242	
		1266	1279	1172	1183	1270	
		1102	1313	1171	1286	1175	
		1190	1358	1190	1223	1220	
	σ	76.347	32.136	40.352	80.804	34.759	
	Average	1166	1312	1204	1179	1226	

0.283	Signal	1757	1914	1874	1750	1873	
		1856	1874	1808	1808	2104	
		1932	1850	1991	1766	2062	
		1729	1917	1890	1971	1958	
		1817	1920	2000	1916	2045	
	σ	80.751	31.369	81.742	96.841	92.500	
	Average	1818	1895	1913	1842	2008	

0.466	Signal	3044	3067	3099	3043	2950	
		3077	3148	2973	3063	3108	
		3094	3102	3104	3061	3077	
		3114	3169	2990	2980	3042	
		3087	3166	3101	3072	3009	
	σ	25.762	44.422	65.934	37.185	61.276	
	Average	3083	3130	3053	3044	3037	

soil class	location (Czech R.)	clay (%)	silt (%)	sand (%)	ρ [g/cm ³]
Sandy loam A	Kopaninský	5.1	33.7	61.2	1.32

parameters for calibration quadratic curve		
a	b	c
-3.80E-8	3.39E-4	-2.15E-1



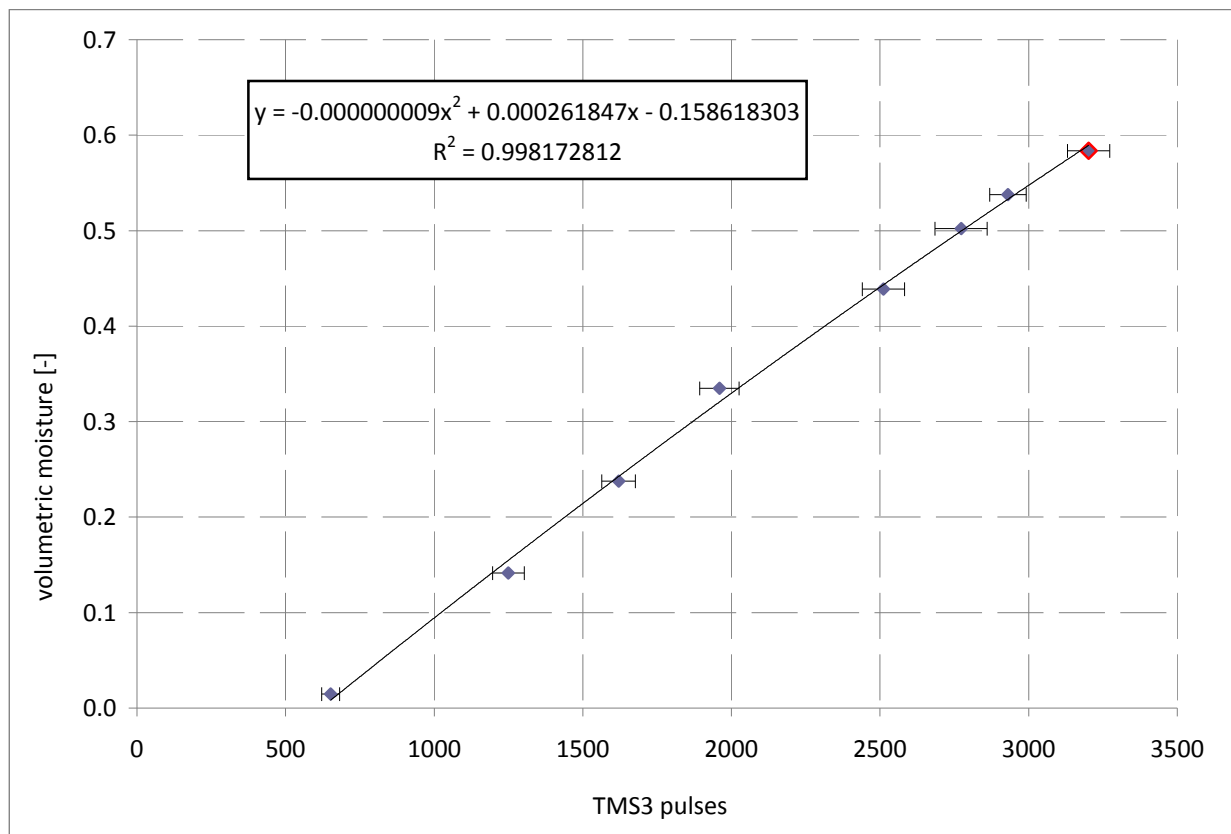
Sandy loam B

Liz

volumetric moisture	TMS3 number:						TMS3 pulses average
		21	22	23	24	25	
0.015	Signal	651	700	616	645	654	
		660	688	620	624	665	
		662	702	600	630	655	
	σ	5.9	7.6	10.6	10.8	6.1	
	Average	658	697	612	633	658	651.5
0.141	Signal	1251	1314	1244	1256	1230	
		1136	1319	1235	1218	1288	
		1273	1340	1201	1251	1189	
	σ	73.6	13.8	22.7	20.6	49.7	
	Average	1220	1324	1227	1242	1236	1249.7
0.238	Signal	1648	1721	1622	1486	1567	
		1690	1590	1625	1580	1604	
		1648	1683	1610	1600	1632	
	σ	24.2	67.4	7.9	60.9	32.6	
	Average	1662	1665	1619	1555	1601	1620.4
0.335	Signal	2069	1901	1814	1921	1941	
		1885	2003	2016	1978	2024	
		1908	1986	1965	1960	2021	
	σ	100.3	54.6	105.0	29.1	47.1	
	Average	1954	1963	1932	1953	1995	1959.5
0.439	Signal	2484	2611	2485	2381	2501	
		2544	2600	2606	2458	2475	
				2502			
	σ	42.4	7.8	65.5	54.4	18.4	
	Average	2514	2606	2531	2420	2488	2511.6
0.502	Signal	2951	2748	2888	2692	2687	
		2781	2699	2801	2764	2716	
	σ	120.2	34.6	61.5	50.9	20.5	
	Average	2866	2724	2845	2728	2702	2772.7
0.538	Signal	3021	2846	2865	2899	3031	
		2974	2939	2922	2902	2903	
	σ	33.2	65.8	40.3	2.1	90.5	
	Average	2998	2893	2894	2901	2967	2930.2
0.584	Signal	3198	3162	3169	3122	3268	
	Saturation	3076	3294	3255	3270	3200	
	σ	86.3	93.3	60.8	104.7	48.1	
	Average	3137	3228	3212	3196	3234	3201.4

soil class	location (Czech R.)	clay (%)	silt (%)	sand (%)	ρ [g/cm ³]
Sandy loam B	Liz	7.6	35.7	56.8	1.07

parameters for calibration quadratic curve		
a	b	c
-9.00E-10	2.62E-4	-1.59E-1



Loam Podolí

volumetric moisture	TMS3 number:	21	22	23	24	25	TMS3 pulses average

0.051	Signal	942	1090	991	1082	1072	
		963	1062	986	980	1052	
		1032	1026	993	1100	1065	
		985	1067	1011	943	1053	
		1004	1086	1047	1008	1067	
	σ	35.010	25.460	24.996	66.864	8.871	
	Average	985	1066	1006	1023	1062	1028.28

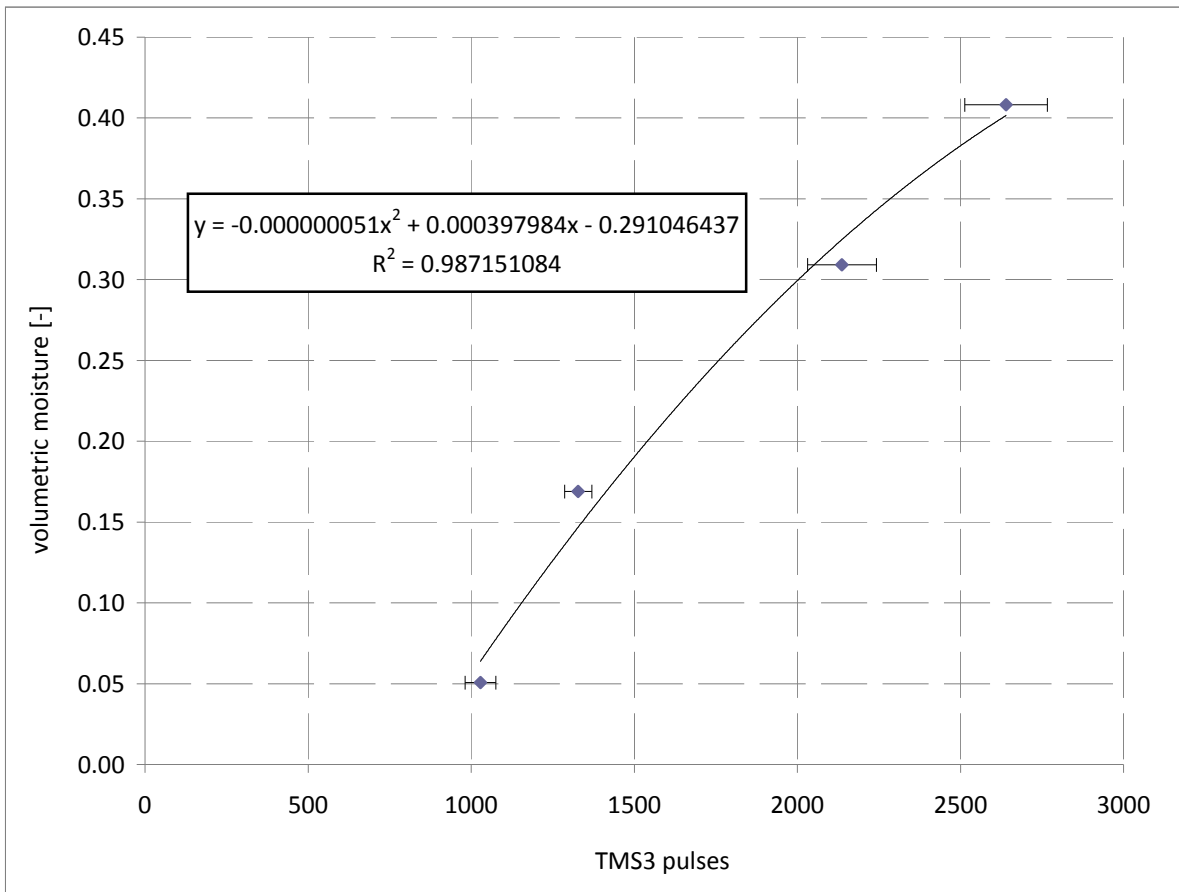
0.169	Signal	1283	1372	1247	1268	1303	
		1344	1363	1303	1311	1294	
		1348	1410	1293	1283	1352	
		1351	1362	1341	1322	1351	
		1346	1397	1313	1273	1371	
	σ	28.850	21.580	34.334	23.860	33.700	
	Average	1334	1381	1299	1291	1334	1328.04

0.309	Signal	2041	2187	2228	2090	2097	
		2189	2149	2226	2255	2312	
		2333	2034	2103	2131	2094	
		2003	2081	2136	2096	2370	
		1976	2133	1966	2124	2065	
	σ	150.103	59.927	107.778	67.072	142.078	
	Average	2108	2117	2132	2139	2188	2136.76

0.408	Signal	2572	2634	2644	2698	2581	
		2526	2699	2726	2959	2666	
		2791	2598	2561	2411	2401	
		2630	2648	2710	2473	2610	
		2824	2716	2592	2547	2785	
	σ	132.559	48.260	71.832	218.858	139.887	
	Average	2669	2659	2647	2618	2609	2640.08

soil class	location (Czech R.)	clay (%)	silt (%)	sand (%)	ρ [g/cm ³]
Loam	Podolí	24.1	28.5	47.4	1.55

parameters for calibration quadratic curve		
a	b	c
-5.10E-8	3.98E-4	-2.91E-1



Silt Loam Nučice

volumetric moisture	TMS3 number						TMS3 pulses average
		21	22	23	24	25	
0.008	Signal	734	759	715	754	746	
		763	738	718	785	775	
	σ	20.506	14.849	2.121	21.920	20.506	
	Average	749	749	717	770	761	749

0.045	Signal	1178	1202	1114	1137	1111	
		1137	1194	1113	1114	1175	
	σ	28.991	5.657	0.707	16.263	45.255	
	Average	1158	1198	1114	1126	1143	1148

0.080	Signal	1338	1355	1324	1302	1309	
		1353	1373	1309	1316	1337	
	σ	10.607	12.728	10.607	9.899	19.799	
	Average	1346	1364	1317	1309	1323	1332

0.117	Signal	1512	1521	1474	1550	1544	
		1523	1537	1457	1597	1565	
	σ	7.778	11.314	12.021	33.234	14.849	
	Average	1518	1529	1466	1574	1555	1528

0.169	Signal	1780	1854	1827	1794	1789	
		1737	1840	1717	1861	1872	
	σ	30.406	9.899	77.782	47.376	58.690	
	Average	1759	1847	1772	1828	1831	1807

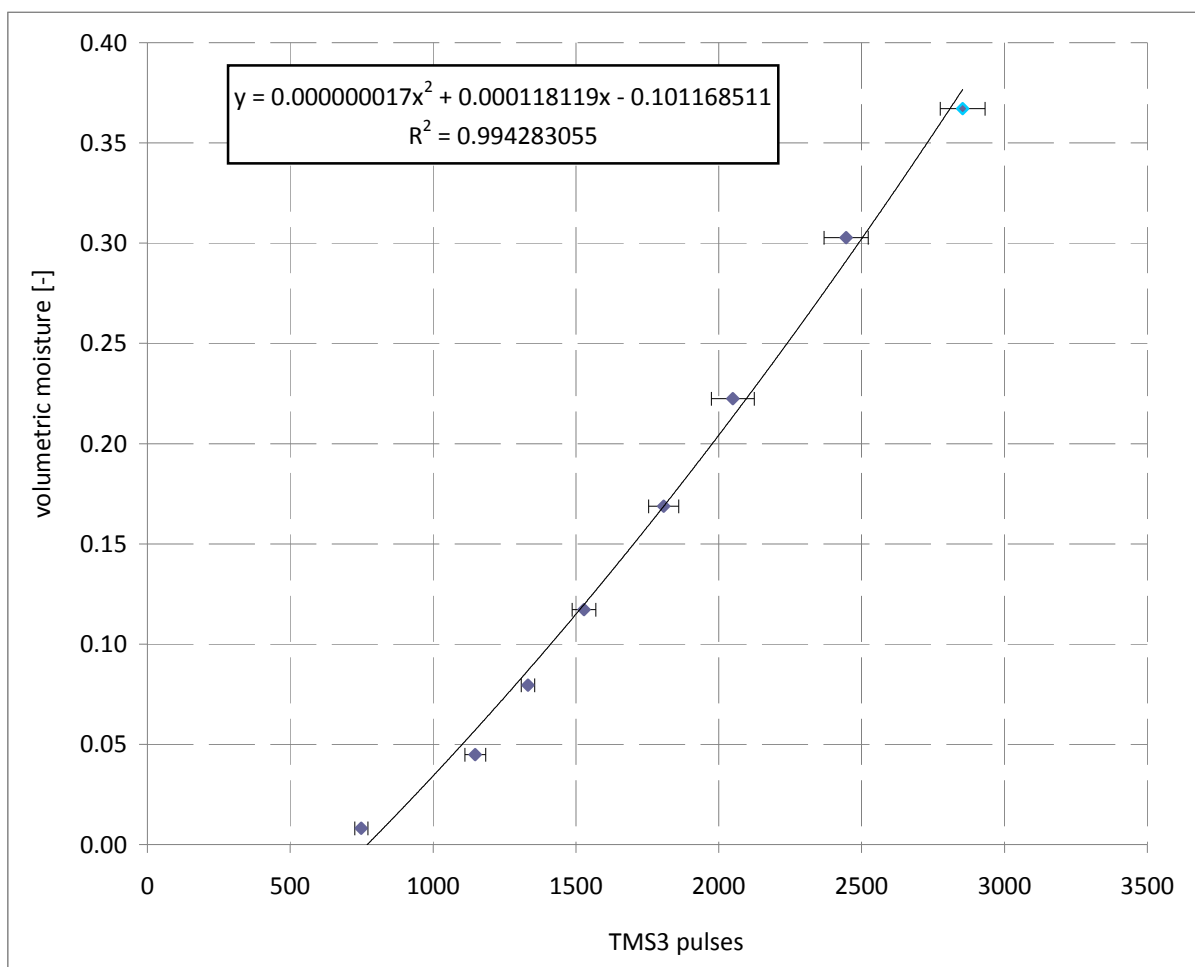
0.222	Signal	2023	2110	1964	2006	2117	
		2076	2151	1934	1989	2119	
	σ	37.477	28.991	21.213	12.021	1.414	
	Average	2050	2131	1949	1998	2118	2049

0.303	Signal	2274	2480	2439	2412	2453	
		2393	2550	2466	2462	2532	
	σ	84.146	49.497	19.092	35.355	55.861	
	Average	2334	2515	2453	2437	2493	2446

0.367	Signal	2927	2874	2825	2821	2668	
		2927	2843	2839	2941	2872	
	σ	0.000	21.920	9.899	84.853	144.250	
	Average	2927	2859	2832	2881	2770	2854

soil class	location (Czech R.)	clay (%)	silt (%)	sand (%)	ρ [g/cm ³]
Silt loam	Nučice	13.0	66.0	21.0	1.29

parameters for calibration quadratic curve		
a	b	c
1.70E-8	1.18E-4	-1.01E-1



Peat Jizera Mts.

volumetric moisture	TMS3 number:						TMS3 pulses average
		21	22	23	24	25	
0.394	Signal	2129	1913	1982	1961	1935	
		2059	2009	1916	1881	1983	
	σ	49.497	67.175	46.669	56.569	33.941	
	Average	2094	1961	1949	1921	1959	1976.8

0.512	Signal	2259	2204	2284	2239	2241	
		2381	2128	2240	2285	2185	
	σ	86.267	53.740	31.820	31.820	39.598	
	Average	2320	2166	2262	2262	2213	2244.6

0.585	Signal	2514	2487	2547	2484	2579	
		2565	2381	2425	2550	2433	
	σ	33.234	74.953	86.267	46.669	103.238	
	Average	2542	2434	2486	2517	2506	2497

0.706	Signal	2687	2618	2589	2584	2724	
		2717	2672	2647	2618	2788	
	σ	21.21	38.18	41.01	24.04	45.25	
	Average	2702	2645	2618	2601	2756	2664.4

0.806	Signal	3040	2812	2885	2911	2904	
		2848	2922	2859	2825	2832	
	σ	135.76	77.78	17.68	60.81	50.91	
	Average	2944	2867	2872	2868	2868	2883.8

soil class	location (Czech R.)	clay (%)	silt (%)	sand (%)	ρ [g/cm ³]
Peat	Jizera Mts				0.10

parameters for calibration quadratic curve		
a	b	c
1.23E-7	-1.45E-4	2.03E-1

