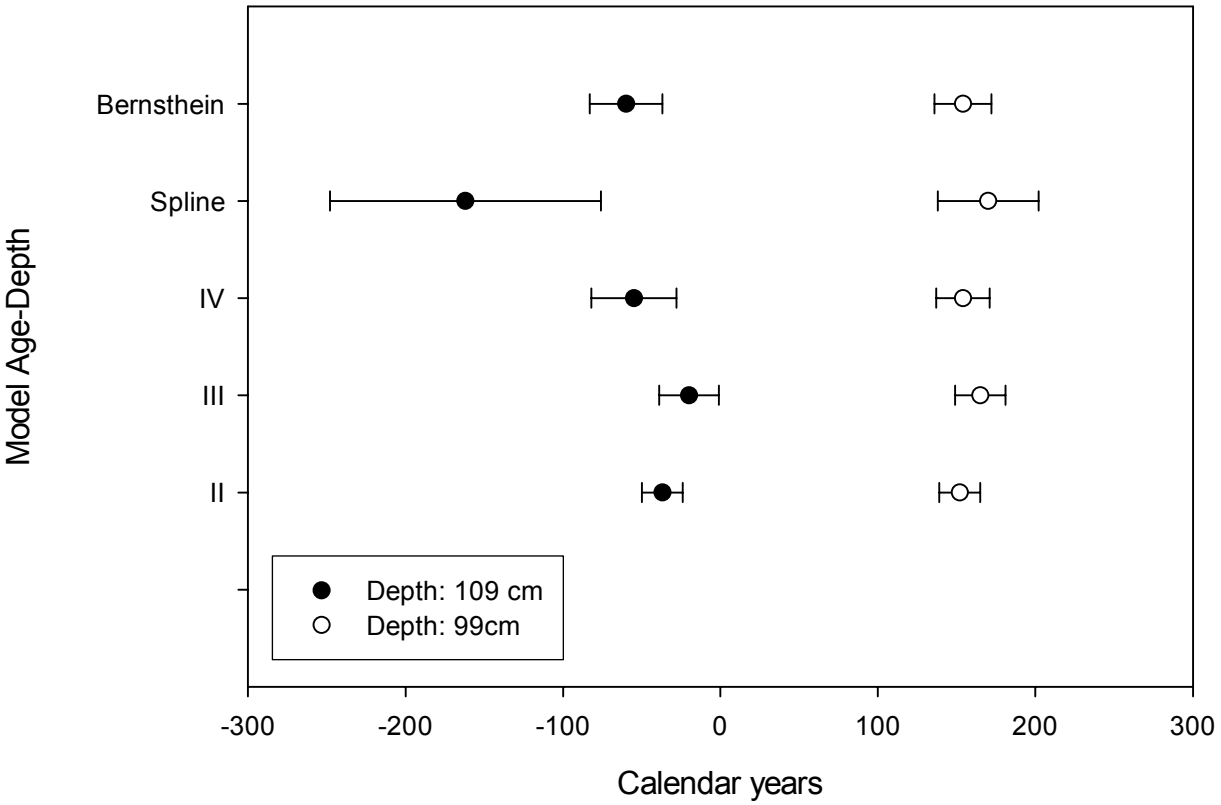
Depth (cm)	Lab-number	Sample name	conv. ^{14}C Age BP	δ^{13}C	cal. Age 1σ	calibr. Age 2σ	Age Modelling with a linear depth-age relationship (Calendar years)	error estimation (2s) by PSIMPOLL (years)	210Pb detectable?
-1		LDW0 (Surface)					2008	29	
-3		LDW1					1970	28	yes
-5		LDW2					1932	28	yes
-7		LDW3					1895	28	no
-31	Hd-22750	LDW 15	612±26	-26.5	cal AD 1305-1400	cal AD1300-1410	1440	23	
-47	Hd-22876	LDW 23	996±46	-26.5	cal AD 990-1160	cal AD 980-1160	1137	19	
-65	Hd-22877	LDW 32	1196±41	-25.4	cal AD 720-850	cal AD710-890	796	16	
-75	Hd-22696	LDW 37	1468±37	-26.8	cal AD 580-640	cal AD555-655	607	15	
-81	Hd-22710	LDW 40	1588±24	-26.5	cal AD 486-532	cal AD 445-540	493	14	
-89	Hd-22697	LDW 44	1659±41	-26.0	cal AD 335-390	cal AD260 - 420	341	14	
-95	Hd-22704	LDW 47	1771±37	-26.8	cal AD 219-260	cal AD170 - 190	228	13	
-99	Hd-22661	LDW 49	1829±23	-24.7	cal AD 128-170	cal AD80-200	152	13	
-105	Hd-22654	LDW 52	1997±38	-24.8	cal BC 20- cal AD 55	cal BC40-cal AD70	38	13	
-119	Hd-22655	LDW 59	2264±47	-25.2	cal BC320-200	cal BC390-200	-227	13	
-215	B-7425	LDW 107	3670±34	-27,1	cal BC 2140-1970	cal BC 2150-1940	-2045	30	

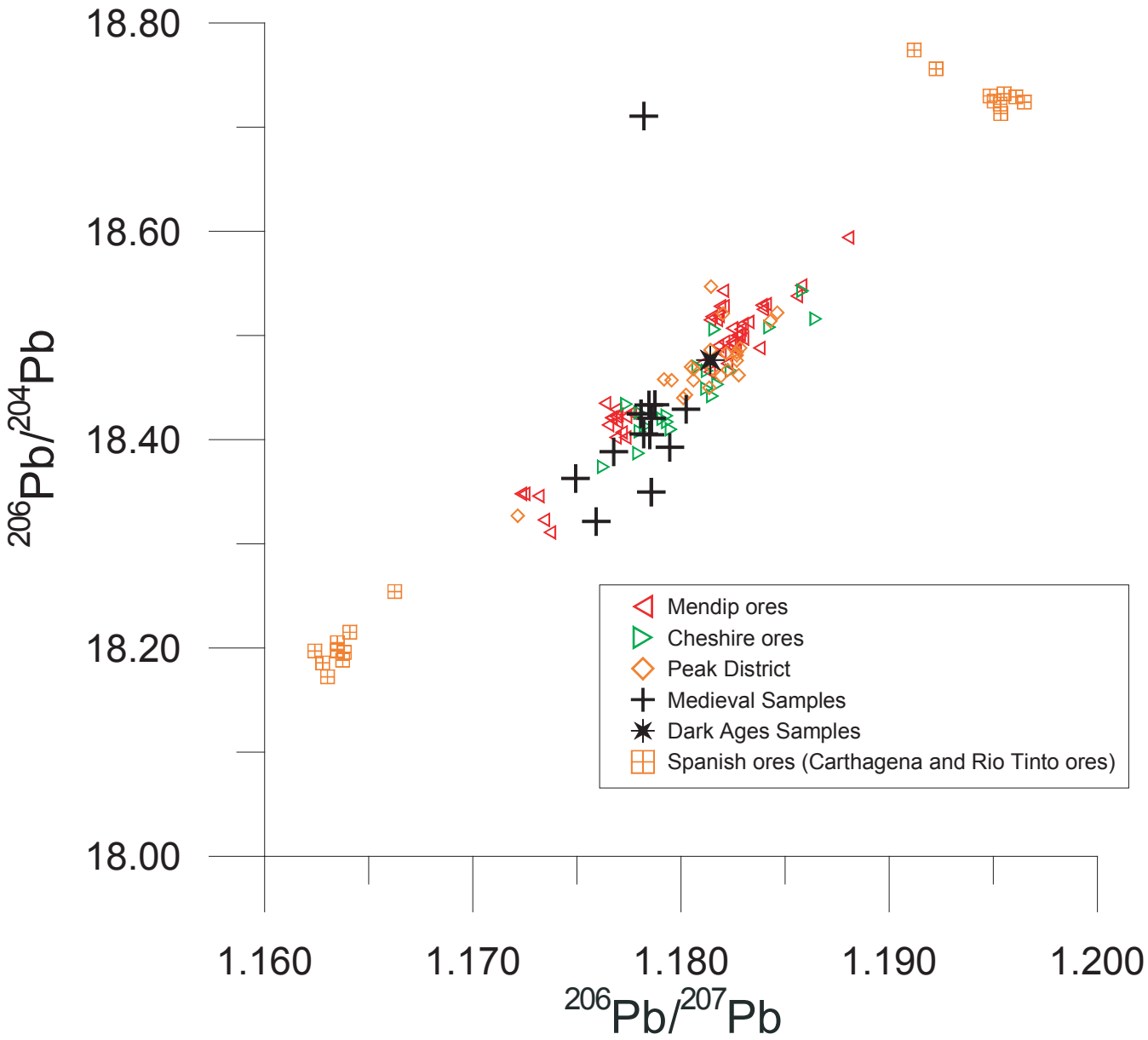


ESI figure 1: comparison between the different age-depth models calculated by PSIMPOLL using the ^{14}C age dating calibrated by BCAL, II (used in the article), III and IV are the number of terms in polynomial fitting, spline and Bernsthein curves are other ways to model the age-depth relationship.[1]

1 K. D. Bennett, *Journal of Quaternary Science*, 2002, **17**, 97.

ESI TABLE 2: Pb isotopes data in the Lindow peat samples

SAMPLE	208/206 corr	SD (2s)	207/206 corr	SD (2s)	206/207corr	Pb concentration µg/g
TIMS measurements						
LDW1	2,116	0,0001	0,872	0,0000	1,146	548,2
LDW2	2,110	0,0007	0,865	0,0003	1,156	460,5
LDW3	2,099	0,0001	0,857	0,0000	1,167	305,2
LDW4	2,096	0,0002	0,855	0,0001	1,170	190,3
LDW5	2,095	0,0001	0,854	0,0000	1,171	77,6
LDW6	2,090	0,0001	0,852	0,0000	1,173	75,1
LDW7	2,090	0,0001	0,851	0,0001	1,175	41,9
LDW9	2,088	0,0001	0,851	0,0000	1,175	45,6
LDW10	2,104	0,0010	0,856	0,0002	1,168	47,2
LDW11	2,100	0,0009	0,855	0,0005	1,169	21,2
LDW13	2,095	0,0002	0,853	0,0001	1,172	22,0
LDW16	2,085	0,0003	0,848	0,0001	1,179	16,5
LDW19	2,083	0,0001	0,847	0,0000	1,180	15,0
LDW22	2,086	0,0002	0,848	0,0001	1,179	19,5
LDW23	2,085	0,0004	0,848	0,0002	1,179	15,2
LDW27	2,086	0,0000	0,848	0,0000	1,179	11,3
LDW39	2,087	0,0016	0,850	0,0008	1,176	0,83
LDW55	2,089	0,0007	0,854	0,0009	1,171	3,3
LDW55	2,096	0,0014	0,854	0,0005	1,171	3,3
MC-ICPMS measurements						
LDW14	2,087		0,850		1,177	10,5
LDW15	2,088		0,850		1,176	10,5
LDW18	2,090		0,851		1,175	9,5
LDW20	2,086		0,849		1,178	13,7
LDW21	2,086		0,849		1,178	12,5
LDW25	2,085		0,849		1,179	11,7
LDW29	2,086		0,849		1,178	5,9
LDW30	2,086		0,849		1,178	4,7
LDW40	2,084		0,846		1,181	1,1
LDW48	2,086		0,849		1,178	2,5
LDW49	2,087		0,849		1,177	4,1
LDW52	2,088		0,850		1,176	4,8
LDW53	2,087		0,849		1,177	3,9
LDW55	2,089		0,851		1,175	3,3
LDW57	2,088		0,850		1,176	2,6
LDW58	2,090		0,850		1,177	2,0
Reproducibility (ppm)		263		222		
SF-ICPMS measurements						
LDW3	2,097	0,0013	0,856	0,0006	1,168	305,2
LDW6	2,091	0,0017	0,852	0,0007	1,173	75,1
LDW23	2,086	0,0010	0,849	0,0004	1,178	15,2
LDW31	2,088	0,0014	0,848	0,0007	1,179	4,8
LDW36	2,084	0,0012	0,841	0,0006	1,189	0,69
LDW44	2,090	0,0012	0,847	0,0008	1,181	0,84
LDW45	2,091	0,0050	0,850	0,0017	1,177	0,89
LDW46	2,088	0,0036	0,848	0,0018	1,179	1,4
LDW55	2,091	0,0033	0,851	0,0004	1,175	3,3
LDW59	2,087	0,0025	0,848	0,0006	1,180	0,61
LDW75	2,091	0,0024	0,846	0,0004	1,182	0,56
LDW90	2,080	0,0027	0,846	0,0022	1,183	0,23
LDW95	2,084	0,0019	0,847	0,0011	1,181	0,16
LDW100	2,090	0,0031	0,851	0,0022	1,175	0,16
LDW105	2,105	0,0022	0,852	0,0011	1,174	0,24



ESI figure 2: 206Pb/207Pb vs. 206Pb/204Pb diagram for samples dated from the Medieval Period. This diagramm illustrates that 204Pb does not help to further distinguish the sources of Pb ores to the bog.