

## Appendix C

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### Set of Data from Deltas

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#### C.1 Introduction

Deltaic deposits were described in Section 6.4. A Synthetic reservoir developed in deltaic settings was used to history-match its production with reservoir models. The realism of the reservoir facies models generated within the automatic history-match process was controlled by “intelligent” geological prior information. This geological prior information was modelled using One-Class SVM (Chapter 4). The data used to build the geological prior information, related to the facies geometry of deltaic deposits, was obtained from published sources and from measurements of modern deltas using Google Earth. There were collected 168 datapoints from different parts of the world and one palaeo-delta observed in Planet Mars (Pondrelli *et al.*, 2011).

The second section of this Appendix mentions the geomorphic parameters of deltaic systems and explains the abbreviations assigned for each geomorphic parameter.

Just like in Appendices A and B, the third section is the table that presents the geomorphic parameters used in this thesis for the description of deltaic systems and the sources where these data points come from.

## **C.2 Geomorphic Parameters**

The geomorphic parameters used in this thesis were described in Chapter 6, the table showed in this Appendix presents the following parameters:

*No.*: Number of identification of the data-point

*Delta*: name of the Delta

### **Delta Plain**

*DL*: Delta Plain Length, measured in meters (m)

*DW*: Delta Plain Width, measured in meters (m)

*DT*: Delta Plain Thickness, measured in meters (m)

### **Distributary Channels**

*w*: Distributary Channel Width, measured in meters (m)

*T*: Distributary Channel Thickness, measured in meters (m)

*P*: Distributary Channel Sinuosity, measured in meters (m)

*Orientation*: Orientation of the channels (degrees), 0 degrees parallel to coast.

### **Mouth Bar**

*MBw*: Mouth Bar Width, measured in meters (m)

*MBL*: Mouth Bar Length, measured in meters (m)

*MBT*: Mouth Bar Thickness, measured in meters (m)

*Source*: Name of the author and date of the publication.

**C.3 Table**

No.	Delta	Delta Plain			Distributary Channel				Mouth Bar			Source
		DL	DW	DT	w	T	P	Orientation	MBw	MBL	MBT	
1	Mississippi	17500	57000	40	1600	10	1	90	5000	3200	30	Fisk (1961)
2	Mississippi	17500	57000	40	1320	11	1	89	3000	3100	20	Fisk (1961)
3	Mississippi	17500	57000	40	1200	12	1	10	3000	3000	20	Fisk (1961)
4	Mississippi	17500	57000	40	1260	12	1	25	2800	3300	40	Fisk (1961)
5	Mississippi	17500	57000	40	1100	15	1	160	2500	1800	40	Fisk (1961)
6	Mississippi	17500	57000	40	900	12	1	40	2100	1700	40	Fisk (1961)
7	Fraser	8046	25750	35	320	16	1	90	1200	1000	15	Mathews and Shepard (1962)
8	Fraser	8046	25750	35	380	17	1.1	75	745	650	12	Mathews and Shepard (1962)
9	Fraser	8046	25750	35	640	16	1.2	80	980	740	11	Mathews and Shepard (1962)
10	Fraser	8046	25750	35	980	15	1.3	70	790	750	10	Mathews and Shepard (1962)
11	Fraser	8046	25750	35	560	17	1.4	90	780	685	12	Mathews and Shepard (1962)
12	Niger	150000	350000	80	360	14	1.8	45	2400	800	12	Allen (1965b)
13	Niger	150000	350000	80	270	12	1.6	55	2300	1300	12	Allen (1965b)
14	Niger	150000	350000	80	290	12	2.1	50	2700	1100	14	Allen (1965b)
15	Niger	150000	350000	80	96	10	2.1	55	2100	1000	14	Allen (1965b)
16	Niger	150000	350000	80	326	12	1.8	60	3200	980	14	Allen (1965b)
17	Niger	150000	350000	80	143	9	1.9	65	2000	780	10	Allen (1965b)
18	Niger	150000	350000	80	362	8	2	70	2100	965	14	Allen (1965b)
19	Niger	150000	350000	80	520	12	2.4	75	3900	1200	12	Allen (1965b)
20	Niger	150000	350000	80	125	8	1.7	80	2500	1300	16	Allen (1965b)
21	Niger	150000	350000	80	98	9	2.3	85	2300	900	14	Allen (1965b)
22	Niger	150000	350000	80	541	11	2.2	90	3600	1200	12	Allen (1965b)
23	Niger	150000	350000	80	430	6	1.8	85	3300	1200	12	Allen (1965b)
24	Niger	150000	350000	80	238	6	2.4	95	3000	1250	10	Allen (1965b)
25	Niger	150000	350000	80	380	8	1.7	105	3100	1150	9	Allen (1965b)
26	Niger	150000	350000	80	365	10	1.9	100	3100	1100	9	Allen (1965b)
27	Niger	150000	350000	80	296	9	1.8	105	2600	900	12	Allen (1965b)
28	Niger	150000	350000	80	179	12	1.7	110	2700	980	12	Allen (1965b)
29	Niger	150000	350000	80	423	12	2.4	115	3800	850	14	Allen (1965b)
30	Niger	150000	350000	80	336	11	2.1	117	3000	930	9	Allen (1965b)
31	Niger	150000	350000	80	310	8	2.6	120	2900	750	16	Allen (1965b)
32	Niger	150000	350000	80	298	10	1.6	125	2700	1280	9	Allen (1965b)
33	Niger	150000	350000	80	293	11	1.9	130	2980	800	10	Allen (1965b)
34	Niger	150000	350000	80	345	12	2.4	135	2400	650	8	Allen (1965b)

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No.	Delta	Delta Plain			Distributary Channel				Mouth Bar			Source
		DL	DW	DT	w	T	P	Orientation	MBw	MBL	MBT	
35	Mitare	9000	15000	8	50	3	1.6	40	850	500	4	Rivas <i>et al.</i> (1997)
36	Mitare	9000	15000	8	60	4	1.3	50	680	380	3	Rivas <i>et al.</i> (1997)
37	Mitare	9000	15000	8	60	2	1.1	60	800	450	5	Rivas <i>et al.</i> (1997)
38	Mitare	9000	15000	8	80	3	1.2	90	630	600	5	Rivas <i>et al.</i> (1997)
39	Mitare	9000	15000	8	40	3	1.4	100	750	550	3	Rivas <i>et al.</i> (1997)
40	Mitare	9000	15000	8	50	2	1.4	110	900	700	4	Rivas <i>et al.</i> (1997)
41	Mitare	9000	15000	8	30	3	1.2	140	750	500	5	Rivas <i>et al.</i> (1997)
42	Indus	75000	60000	-	821	-	1.8	70	6000	1700	-	Giosan <i>et al.</i> (2006)
43	Indus	75000	60000	-	793	-	1.8	90	6000	1700	-	Giosan <i>et al.</i> (2006)
44	Colorado	38000	26000	12	680		1.1	70	8000	6000	6	Carriquiry and Sanchez (1999)
45	Colorado	38000	26000	12	935		1.2	100	8000	6000	8	Carriquiry and Sanchez (1999)
46	Wax Lake	10000	9000	12	378	3	1	50	2000	1400	10	Olariu and Bhattacharya (2006)
47	Wax Lake	10000	9000	12	540	3	1.1	60	1900	1200	12	Olariu and Bhattacharya (2006)
48	Wax Lake	10000	9000	12	177	2	1.05	70	1800	1300	12	Olariu and Bhattacharya (2006)
49	Wax Lake	10000	9000	12	400	2	1	90	1900	1300	12	Olariu and Bhattacharya (2006)
50	Wax Lake	10000	9000	12	270	3	1.1	98	1700	1500	10	Olariu and Bhattacharya (2006)
51	Wax Lake	10000	9000	12	180	3	1	110	1900	1650	12	Olariu and Bhattacharya (2006)
52	Wax Lake	10000	9000	12	304	2	1.01	115	2000	1420	8	Olariu and Bhattacharya (2006)
53	Wax Lake	10000	9000	12	411	3	1	120	1600	1260	12	Olariu and Bhattacharya (2006)
54	Atchafala	11600	8400	16	220	2	1.02	135	2400	1800	12	Olariu and Bhattacharya (2006)
55	Atchafala	11600	8400	16	341	3	1	120	2000	2200	14	Olariu and Bhattacharya (2006)
56	Atchafala	11600	8400	16	341	3	1.2	100	2200	2300	12	Olariu and Bhattacharya (2006)
57	Atchafala	11600	8400	16	380	4	1.1	90	2200	5000	12	Olariu and Bhattacharya (2006)
58	Atchafala	11600	8400	16	189	3	1.06	80	3000	1200	10	Olariu and Bhattacharya (2006)
59	Atchafala	11600	8400	16	302	2	1.2	70	1900	2100	12	Olariu and Bhattacharya (2006)
60	Atchafala	11600	8400	16	420	2	1.1	65	2000	2500	14	Olariu and Bhattacharya (2006)
61	Atchafala	11600	8400	16	325	2	1.2	50	2500	2000	12	Olariu and Bhattacharya (2006)
62	Volga	127000	157000	19	400	6	1.3	135	1800	1200	6	Kroonenberg <i>et al.</i> (1997)
63	Volga	127000	157000	19	300	7	1.3	130	1600	1100	5	Kroonenberg <i>et al.</i> (1997)
64	Volga	127000	157000	19	600	6	1.4	125	1200	1000	5	Kroonenberg <i>et al.</i> (1997)
65	Volga	127000	157000	19	450	4	1.3	115	1600	800	5	Kroonenberg <i>et al.</i> (1997)
66	Volga	127000	157000	19	430	6	1.3	110	1400	900	4	Kroonenberg <i>et al.</i> (1997)
67	Volga	127000	157000	19	500	5	1.2	100	1200	1300	4	Kroonenberg <i>et al.</i> (1997)
68	Volga	127000	157000	19	550	7	1.3	90	1500	1200	6	Kroonenberg <i>et al.</i> (1997)
69	Volga	127000	157000	19	675	6	1.2	65	1400	1500	8	Kroonenberg <i>et al.</i> (1997)
70	Volga	127000	157000	19	442	8	1.3	55	1600	1200	6	Kroonenberg <i>et al.</i> (1997)
71	Volga	127000	157000	19	540	6	1.4	45	1900	1330	6	Kroonenberg <i>et al.</i> (1997)

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No.	Delta	Delta Plain			Distributary Channel				Mouth Bar			Source
		DL	DW	DT	w	T	P	Orientation	MBw	MBL	MBT	
72	Magdalena	20000	38000	-	500	-	1.2	90	4400	2100	-	Google Earth
73	Orinoco	77000	87000	59	1800	-	1.1	70	3000	3600	-	Warne <i>et al.</i> (2002)
74	Orinoco	77000	87000	59	1200	-	1.2	70	2900	3400	-	Warne <i>et al.</i> (2002)
75	Orinoco	77000	87000	59	500	-	1.2	75	3200	3800	-	Warne <i>et al.</i> (2002)
76	Orinoco	77000	87000	59	1600	-	1.1	80	4200	4800	-	Warne <i>et al.</i> (2002)
77	Orinoco	77000	87000	59	1700	-	1.3	85	2900	4650	-	Warne <i>et al.</i> (2002)
78	Orinoco	77000	87000	59	780	-	1.1	90	3100	4600	-	Warne <i>et al.</i> (2002)
79	Orinoco	77000	87000	59	800	-	1.1	90	3100	3800	-	Warne <i>et al.</i> (2002)
80	Orinoco	77000	87000	59	980	-	1.1	95	3000	4800	-	Warne <i>et al.</i> (2002)
81	Orinoco	77000	87000	59	2500	-	1.2	100	3050	4600	-	Warne <i>et al.</i> (2002)
82	Orinoco	77000	87000	59	1300	-	1.1	110	3600	4200	-	Warne <i>et al.</i> (2002)
83	Orinoco	77000	87000	59	900	-	1.2	120	3250	5200	-	Warne <i>et al.</i> (2002)
84	Sinu	4500	5900	6	46	2	1	130	900	510	6	Serrano (2004)
85	Sinu	4500	5900	6	55	3	1.1	120	900	520	4	Serrano (2004)
86	Sinu	4500	5900	6	59	3	1.1	90	910	520	4	Serrano (2004)
87	Sinu	4500	5900	6	52	2	1	50	920	487	5	Serrano (2004)
88	Danube	35000	55000	10	400	6	2.1	90	6000	1000	4	Panin (2003)
89	Rhone	13000	25000	10	690	7	1.1	90	1000	1300	8	Arnaud-Fassetta (2003)
90	Rhone	13000	25000	10	500	5	1.4	160	600	500	10	Arnaud-Fassetta (2003)
91	Rhone	13000	25000	10	150	3	1.2	40	700	900	7	Arnaud-Fassetta (2003)
92	Zambezi	57000	47000	-	620	-	1.2	45	7000	3000	-	Walford <i>et al.</i> (2005)
93	Zambezi	57000	47000	-	850	-	1.3	90	6500	2000	-	Walford <i>et al.</i> (2005)
94	Zambezi	57000	47000	-	740	-	1.4	155	7200	5000	-	Walford <i>et al.</i> (2005)
95	Catatumbo	9000	5000	5	60	5	1.3	30	2200	1200	9	Hyne <i>et al.</i> (1979)
96	Catatumbo	9000	5000	5	80	7	1.1	90	2200	1200	6	Hyne <i>et al.</i> (1979)
97	Catatumbo	9000	5000	5	80	8	1.3	135	1900	1100	7	Hyne <i>et al.</i> (1979)
98	Mahakam	43200	70790	25	700	6	1.2	25	2800	3200	4	Allen <i>et al.</i> (1979)
99	Mahakam	43200	70790	25	900	7	1.2	30	3000	3650	7	Allen <i>et al.</i> (1979)
100	Mahakam	43200	70790	25	900	9	1.3	60	3200	3600	6	Allen <i>et al.</i> (1979)
101	Mahakam	43200	70790	25	800	6	1.2	65	3100	3400	6	Allen <i>et al.</i> (1979)
102	Mahakam	43200	70790	25	500	7	1.2	70	2900	3200	5	Allen <i>et al.</i> (1979)
103	Mahakam	43200	70790	25	600	8	1.1	100	2700	3300	5	Allen <i>et al.</i> (1979)
104	Mahakam	43200	70790	25	400	9	1.2	110	2600	3000	6	Allen <i>et al.</i> (1979)
105	Mahakam	43200	70790	25	300	6	1.3	120	2600	3200	3	Allen <i>et al.</i> (1979)
106	Mahakam	43200	70790	25	200	5	1.1	135	2600	3000	5	Allen <i>et al.</i> (1979)

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No.	Delta	Delta Plain			Distributary Channel				Mouth Bar			Source
		DL	DW	DT	w	T	P	Orientation	MBw	MBL	MBT	
107	Eberswalde	11000	9000	35	500	7	1.1	50	2000	1000	10	Pondrelli <i>et al.</i> (2011)
108	Eberswalde	11000	9000	35	600	8	1.3	60	2000	1000	12	
109	Eberswalde	11000	9000	35	200	5	1.2	70	2500	1200	12	
110	Eberswalde	11000	9000	35	150	5	1.3	90	1800	1000	10	
111	Eberswalde	11000	9000	35	200	5	1.1	110	1700	1100	9	
112	Eberswalde	11000	9000	35	400	8	1.4	120	1900	800	8	
113	Eberswalde	11000	9000	35	400	8	1.3	130	1600	900	10	
114	Po	23000	32300	10	164	3	1.2	50	2700	900	3	Correggiari <i>et al.</i> (2005)
115	Po	23000	32300	10	154	3	1.2	55	2300	700	3	
116	Po	23000	32300	10	175	4	1.3	60	2600	800	4	
117	Po	23000	32300	10	211	5	1.2	90	2700	900	4	
118	Po	23000	32300	10	207	3	1.3	110	2650	870	3	
119	Po	23000	32300	10	198	4	1.3	115	2400	800	4	
120	Po	23000	32300	10	210	5	1.3	120	2650	910	6	
121	Burdekin	12600	13200	29	560	12	1	70	2900	1350	5	Fielding <i>et al.</i> (2006)
122	Burdekin	12600	13200	29	289	10	1.1	100	2700	1250	4	
123	Burdekin	12600	13200	29	180	5	1.2	120	2600	1150	3	
124	Fly	61000	101000	23	6400	10	1.1	75	10000	20000	6	Harris <i>et al.</i> (1996)
125	Fly	61000	101000	23	3600	12	1.2	80	10000	12000	6	
126	Fly	61000	101000	23	7200	12	1.1	90	10000	20000	7	
127	Fly	61000	101000	23	2500	12	1.1	100	9000	10000	6	
128	Fly	61000	101000	23	2150	11	1.1	110	10000	11000	5	
129	Krishna	16000	20000	-	667	-	1.1	80	2000	900	-	Google Earth
130	Krishna	16000	20000	-	684	-	1	90	2000	1100	-	
131	Krishna	16000	20000	-	760	-	1.1	110	2200	1200	-	
132	Parana	35000	50000	-	250	-	1.3	30	2000	1200	-	Google Earth
133	Parana	35000	50000	-	233	-	1.2	45	2600	980	-	
134	Parana	35000	50000	-	290	-	1.3	80	2900	1280	-	
135	Parana	35000	50000	-	670	-	1.3	85	3000	1200	-	
136	Parana	35000	50000	-	440	-	1.2	90	2500	1220	-	
137	Parana	35000	50000	-	522	-	1.4	95	2700	1111	-	
138	Parana	35000	50000	-	360	-	1.2	115	2500	1100	-	
139	Parana	35000	50000	-	271	-	1.3	130	2200	1000	-	

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No.	Delta	Delta Plain			Distributary Channel				Mouth Bar			Source
		DL	DW	DT	w	T	P	Orientation	MBw	MBL	MBT	
140	Selenga	23000	36000	-	160	-	1.5	15	-	-	-	Google Earth
141	Selenga	23000	36000	-	158	-	1.6	30	-	-	-	Google Earth
142	Selenga	23000	36000	-	158	-	1.6	40	-	-	-	Google Earth
143	Selenga	23000	36000	-	130	-	1.6	45	-	-	-	Google Earth
144	Selenga	23000	36000	-	60	-	1.6	60	-	-	-	Google Earth
145	Selenga	23000	36000	-	58	-	1.5	90	-	-	-	Google Earth
146	Selenga	23000	36000	-	56	-	1.4	100	-	-	-	Google Earth
147	Selenga	23000	36000	-	75	-	1.6	120	-	-	-	Google Earth
148	Selenga	23000	36000	-	104	-	1.4	140	-	-	-	Google Earth
149	Selenga	23000	36000	-	170	-	1.6	170	-	-	-	Google Earth
150	Yellow	22000	19000	14	373	7	1	60	2100	1600	7	Saito <i>et al.</i> (2000)
151	Yellow	22000	19000	14	790	5	1	130	2000	1200	6	Saito <i>et al.</i> (2000)
152	Yukon	70000	93000	21	1300	4	1.4	20	10000	18000	7	Dupre and Thompson (1979)
153	Yukon	70000	93000	21	1200	3	1.3	25	9000	17000	6	Dupre and Thompson (1979)
154	Yukon	70000	93000	21	500	3	1.3	30	8000	17000	6	Dupre and Thompson (1979)
155	Yukon	70000	93000	21	1060	6	1.5	90	8000	16000	6	Dupre and Thompson (1979)
156	Yukon	7000	93000	21	600	4	1.4	100	5000	15000	5	Dupre and Thompson (1979)
157	Yukon	70000	93000	21	500	3	1.6	120	6000	15000	5	Dupre and Thompson (1979)
158	Yukon	70000	93000	21	500	3	1.5	130	5000	12000	6	Dupre and Thompson (1979)
159	Yukon	70000	93000	21	230	3	1.3	160	10000	19000	7	Dupre and Thompson (1979)
160	Gascoyne	2000	3000	8	180	3	1.1	70	400	900	5	Johnson (1982)
161	Gascoyne	2000	3000	8	349	4	1.2	120	360	850	6	Johnson (1982)
162	St Clair	19000	22000	10	584	12	1.2	50	4900	3000	6	Pezzetta (1973)
163	St Clair	19000	22000	10	329	10	1.2	60	4600	2700	4	Pezzetta (1973)
164	St Clair	19000	22000	10	425	10	1.1	80	4700	2900	3	Pezzetta (1973)
165	St Clair	19000	22000	10	317	7	1.2	85	4400	2800	3	Pezzetta (1973)
166	St Clair	19000	22000	10	531	10	1.2	90	4500	2700	4	Pezzetta (1973)
167	St Clair	19000	22000	10	177	8	1.2	110	1700	1200	6	Pezzetta (1973)
168	St Clair	19000	22000	10	200	6	1.1	130	1600	1120	4	Pezzetta (1973)

