

Modeling of anisotropy in the lithosphere and asthenosphere for real Earth cases: a critical assessment of the impact on SKS measurements

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Introduction

This supporting on-line material contains the detailed results of the analysis for each single station (RCBR, GOGA, BUDO and COR), in terms of splitting parameters retrieved for each XKS phase recorded.

Each table contains (increasing order of column):

Origin time: Origin time of the event that produced the recorded phase;

Phase: XKS phase analysed

BAZ: Back-azimuthal direction of the event generating the XKS phase

CORR: sensor correction

PHI: polarisation direction

DELTA: delay-time between splitted XKS components

PHI_1: minimum value for PHI

PHI_2: maximum value for PHI

DELTA_1: minimum value for DELTA

DELTA_2: maximum value for DELTA

CATEGORY: quality of the splitting measurement (could be "null-measurement")

CONF: confidence level

Table S1. Splitting results for RCBR (refer to Appendix C1)

Origin time	Phase	BAZ	CORR	PHI	DELTA	PHI_1	PHI_2	DELTA_1	DELTA_2	CATEGORY	CONF
13-Apr-1999 10:38:48	SKIKS	234	14.4	30	3.28	19	40	2.05	4.00	average	8199
28-Feb-2001 18:54:32	SKS	317	14.4	21	2.97	8	32	1.74	4.00	good	9436
19-Aug-2002 11:08:24	SKKS	227	14.4	25	3.59	14	35	2.05	4.00	average	6612
26-Feb-2006 03:08:27	SKIKS	229	14.4	48.8	0.00	0	0	0.00	0.00	null-measurement	6443
03-May-2006 15:26:40	SKKS	237	14.4	56.6	0.00	0	0	0.00	0.00	null-measurement	3586
09-Dec-2007 07:28:20	SKS	228	14.4	47.9	0.00	0	0	0.00	0.00	null-measurement	8754
09-Dec-2007 07:28:20	SKIKS	228	14.4	47.9	0.00	0	0	0.00	0.00	null-measurement	8749
15-Jan-2009 17:49:39	PKS	349	14.4	-4	2.97	-9	0	1.74	4.00	average	1164
19-Mar-2009 18:17:40	PKIKS	233	14.4	53	0.00	0	0	0.00	0.00	null-measurement	2038
22-Nov-2009 07:48:20	SKKS	237	14.4	-27	1.95	-31	-25	1.23	2.67	average	450

Table S2. Splitting results for GOGA (refer to Appendix C2)

Origin time	Phase	BAZ	CORR	PHI	DELTA	PHI_1	PHI_2	DELTA_1	DELTA_2	CATEGORY	CONF
28-Jan-2000 14:21:07	SKS	326	-6	146	0.00	0	0	0.00	0.00	null-measurement	82
25-Feb-2000 01:43:58	SKS	260	-2	28	0.62	3	62	0.31	1.23	good	717
04-May-2000 04:21:16	PKS	316	-8	136	0.00	0	0	0.00	0.00	null-measurement	1711
12-May-2000 23:10:29	SKS	22	22	22	0.00	0	0	0.00	0.00	null-measurement	2
12-May-2000 23:10:29	SKKS	22	22	22	0.00	0	0	0.00	0.00	null-measurement	1
06-Jun-2000 02:41:49	SKS	43	55	14	2.05	173	27	1.03	3.18	good	9320
14-Jun-2000 02:15:25	SKS	252	-1	72	0.00	0	0	0.00	0.00	null-measurement	440
14-Jun-2000 02:15:25	SKKS	252	-6	154	1.44	151	157	0.92	2.15	average	670
03-Aug-2000 01:09:38	SKS	271	-2	91	0.00	0	0	0.00	0.00	null-measurement	644
12-Aug-2000 10:26:15	PKS	301	2	69	0.41	53	84	0.31	0.62	good	3721
15-Aug-2000 04:30:08	SKS	246	-5	66	0.00	0	0	0.00	0.00	null-measurement	270
15-Aug-2000 04:30:08	SKKS	246	-6	66	0.00	0	0	0.00	0.00	null-measurement	204
28-Aug-2000 15:05:47	PKS	309	-5	129	0.00	0	0	0.00	0.00	null-measurement	707
11-Sep-2000 17:17:53	SKS	257	-5	77	0.00	0	0	0.00	0.00	null-measurement	547
26-Sep-2000 06:17:52	SKKS	256	-5	76	0.00	0	0	0.00	0.00	null-measurement	704
07-Nov-2000 00:18:04	SKS	152	-20	130	0.72	74	146	0.21	2.05	average	1086
22-Dec-2000 10:13:01	SKKS	327	96	29	1.03	7	39	0.62	1.54	good	1698
01-Jan-2001 06:57:04	PKIKS	319	-8	139	0.00	0	0	0.00	0.00	null-measurement	423
09-Jan-2001 16:49:28	SKS	268	1	88	0.00	0	0	0.00	0.00	null-measurement	1536
26-Jan-2001 03:16:40	SKKS	28	-9	28	0.00	0	0	0.00	0.00	null-measurement	1524
24-Feb-2001 07:23:48	PKS	315	-9	81	0.21	56	119	0.10	0.51	average	389
24-Mar-2001 06:27:53	SKS	330	-6	81	0.82	62	140	0.10	2.46	average	3364
13-Apr-2001 15:33:53	SKS	154	-9	154	0.00	0	0	0.00	0.00	null-measurement	5691
14-Apr-2001 23:27:26	SKS	321	-7	141	0.00	0	0	0.00	0.00	null-measurement	1391
26-Apr-2001 17:48:57	SKKS	326	-79	32	1.64	20	39	1.13	2.36	good	4254
28-Apr-2001 04:49:53	SKS	257	-5	77	0.00	0	0	0.00	0.00	null-measurement	98
25-May-2001 00:40:50	SKKS	326	66	146	0.00	0	0	0.00	0.00	null-measurement	5483
29-May-2001 23:37:19	SKS	282	-2	102	0.00	0	0	0.00	0.00	null-measurement	2473
03-Jun-2001 02:41:57	SKS	247	-7	67	0.00	0	0	0.00	0.00	null-measurement	149

Table S3. Splitting results for BUDO (refer to Appendix C3)

Origin time	Phase	BAZ	CORR	PHI	DELTA	PHI_1	PHI_2	DELTA_1	DELTA_2	CATEGORY	CONF
15-Aug-1991 13:36:01	SKS	112	4	86	2.36	80	90	2.05	2.67	good	2999
17-Aug-1991 22:17:15	SKS	28	4	108	2.05	101	112	1.13	2.87	good	613
30-Sep-1991 00:21:47	SKS	109	4	91	2.05	81	99	1.44	2.67	average	3549
18-Oct-1991 17:22:53	SKS	111	4	87	2.26	79	93	1.85	2.77	good	3649
19-Nov-1991 22:28:50	PKS	347	4	90	2.36	82	118	0.62	4.00	average	2328
03-Dec-1991 10:33:40	SKS	115	4	91	2.05	85	96	1.74	2.36	good	2197
11-Dec-1991 20:39:40	SKS	116	4	97	1.23	59	109	0.41	2.36	average	2398
27-Dec-1991 04:05:58	PKS	224	4	99	1.64	91	106	1.33	1.95	good	2086
28-Dec-1991 00:52:10	PKS	223	4	104	1.74	96	110	1.44	2.05	good	772
03-Jan-1992 03:39:20	SKS	161	4	103	1.85	91	116	1.23	2.56	average	7305
03-Mar-1992 01:18:34	SKS	111	4	88	2.77	81	92	2.26	3.28	good	4563
17-Mar-1992 00:38:08	SKS	114	4	82	2.77	73	89	2.36	3.28	good	1314
26-Apr-1992 11:18:26	SKS	28	4	103	1.95	97	107	1.33	2.46	good	505
16-May-1992 14:58:38	SKS	114	4	91	1.85	86	96	1.54	2.26	good	239
16-May-1992 14:58:38	SKKS	114	4	91	1.85	85	97	1.44	2.36	good	319
30-May-1992 16:30:01	PKIKS	9	4	9	0.00	0	0	0.00	0.00	null-measurement	426
22-Jun-1992 04:00:41	PKS	217	4	107	1.95	102	111	1.64	2.26	good	2414

Table S4. Splitting results for COR (refer to Appendix C4)

Origin time	Phase	BAZ	CORR	PHI	DELTA	PHI_1	PHI_2	DELTA_1	DELTA_2	CATEGORY	CONF
21-Mar-1990 16:46:05	SKS	225	-1	71.00	1.13	62	89	0.72	1.54	good	414
18-Apr-1990 18:32:59	SKS	288	-3	69.00	1.54	56	81	1.23	1.95	good	1948
19-Apr-1990 12:40:38	SKS	288	0	82.00	1.85	74	88	1.44	2.26	good	2245
30-May-1990 10:40:06	SKS	21	-2	85.00	1.23	64	-83	0.62	2.05	average	1295
14-Jun-1990 07:40:56	SKS	296	0	84.00	1.44	73	-89	1.03	1.74	good	2397
20-Jun-1990 21:00:09	SKKS	6	4	57.00	0.72	38	73	0.51	1.03	good	410
10-Jul-1990 03:17:59	SKS	253	5	65.00	2.26	58	69	1.03	3.59	average	579
16-Jul-1990 07:26:34	SKKS	299	-2	85.00	1.44	73	-85	1.13	1.85	good	1408
12-Aug-1990 21:25:21	SKS	241	1	60.80	0.00	0	0	0.00	0.00	null-measurement	4602
23-Sep-1990 17:54:02	SKS	243	-2	63.00	0.00	0	0	0.00	0.00	null-measurement	3884
05-Jan-1991 14:57:11	SKS	323	-3	70.00	1.74	66	76	1.23	2.26	good	650
18-Feb-1991 02:37:25	SKS	291	-1	78.00	1.54	65	-91	1.13	2.15	good	2092
20-Jun-1991 05:18:52	SKS	288	1	70.00	1.33	49	87	0.92	1.95	good	1242
23-Jun-1991 21:22:28	SKS	129	-22	54.00	1.23	48	64	0.72	1.85	good	66
19-Oct-1991 21:23:14	SKS	341	-2	160.70	0.00	0	0	0.00	0.00	null-measurement	1324
13-Mar-1992 17:18:39	SKS	13	1	59.00	1.03	36	81	0.62	1.44	average	2767
17-May-1992 09:49:19	SKS	289	-3	89.00	1.44	78	-85	0.92	2.15	average	1739
22-Oct-1992 09:04:23	SKS	224	-3	77.00	0.62	54	-59	0.21	1.54	average	302
18-May-1993 10:19:33	SKS	301	-1	85.00	1.85	80	89	1.54	2.05	good	1322
04-Jun-1993 10:49:33	SKS	286	1	82.00	1.85	72	-91	1.23	2.56	good	2295
07-Aug-1993 00:00:37	SKS	303	42	-22.00	1.44	-37	-3	0.82	1.95	average	6505
13-Oct-1993 02:06:00	SKS	266	4	76.00	1.44	69	79	0.82	2.05	average	439
25-Oct-1993 10:27:04	SKS	266	4	24.00	0.72	9	54	0.41	1.44	average	817
21-Jan-1994 02:24:29	SKS	284	7	76.00	1.54	61	86	1.03	2.05	good	1669
18-Apr-1994 17:29:54	SKKS	260	-8	29.00	1.23	19	39	0.92	1.44	good	1311
29-Apr-1994 07:11:29	SKS	130	-10	59.00	1.33	54	66	0.92	1.74	good	144
10-May-1994 06:36:28	SKS	130	-9	63.00	1.33	54	76	0.82	1.85	average	514
24-May-1994 04:00:42	SKS	304	5	80.00	1.44	69	-90	1.13	1.74	good	362