

## Supplementary Information

### Stress state of the northwest Indian shield with emphasis on the Intraplate Delhi Seismic Zone

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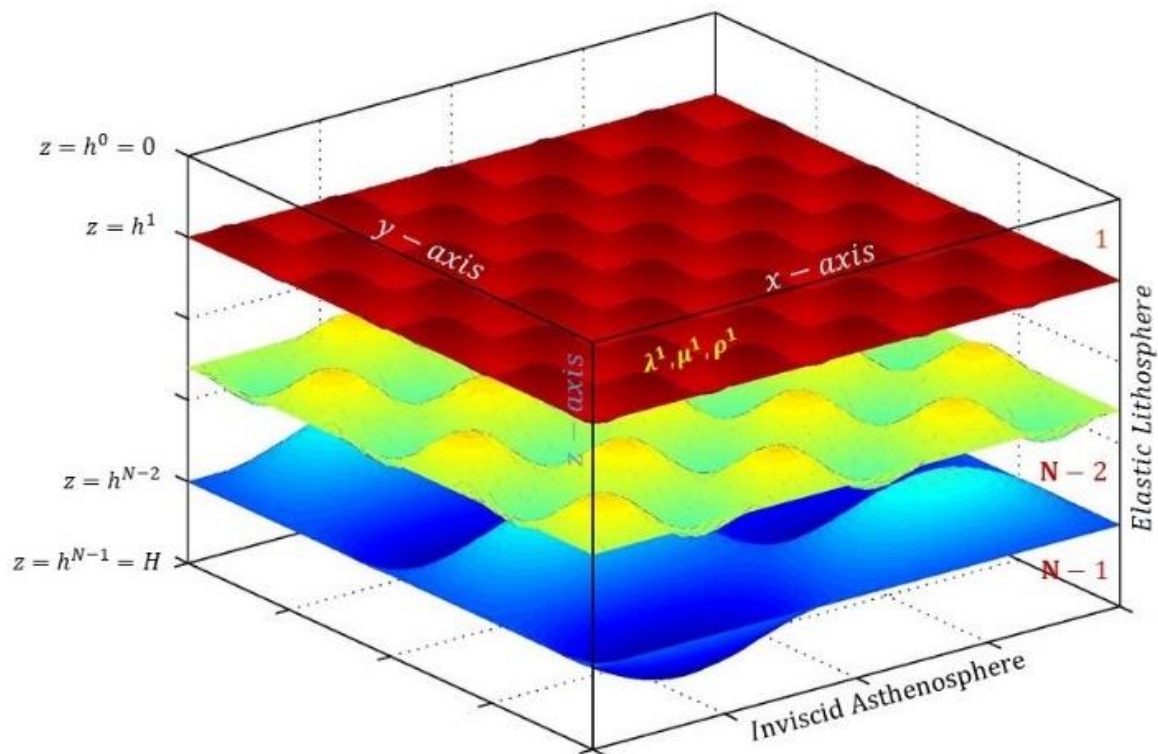
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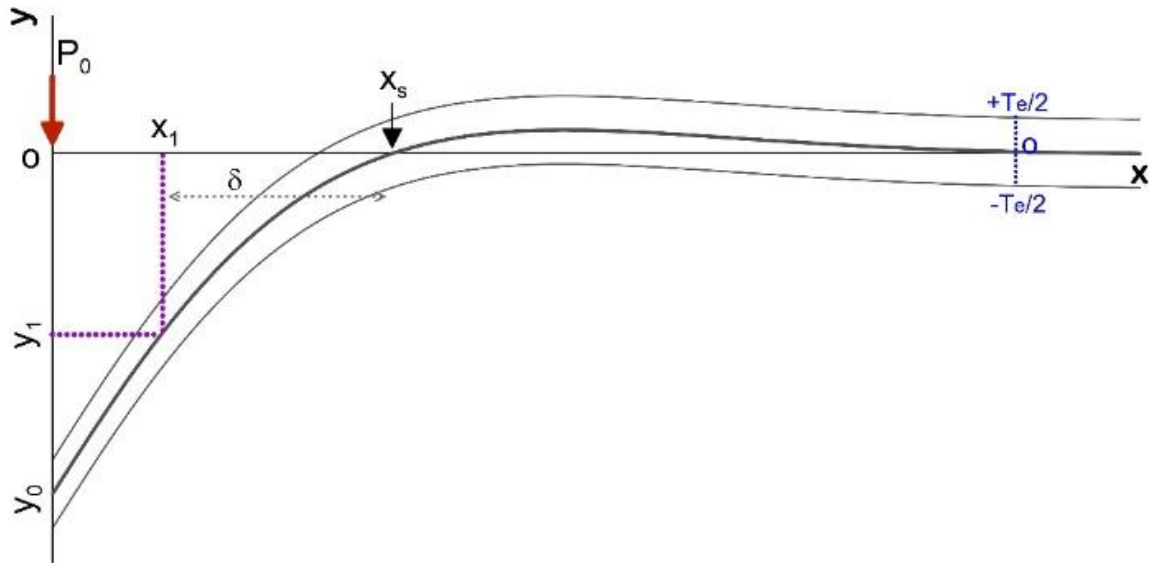
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## 4 Mathematical formulation



**Figure S1.** A schematic diagram of the layered model for the local intraplate stress computation.



**Figure S2.** A schematic diagram of the flexure of a semi-infinite elastic plate.

### 3 Seismicity distribution

**Table S1.** Focal mechanisms of earthquakes in NW India covering the Aravalli Delhi Fold Belt (ADFB) and the Delhi Seismic Zone (DSZ) [23°N-32°N, 69°E-80°E]. The data are compiled from references: 1 - Shukla *et al.* (2007), 2 - Bansal and Verma (2012), 3 - Pandey *et al.* (2020), 4 - Mahesh *et al.* (2015), 5 - Molnar *et al.* (1973), 6 - Choudhury *et al.* (2019), 7 - Aggarwal *et al.* (2016), and 8 - Chandra (1977).

SN	Date			Long. (E)	Lat. (N)	Depth (km)	$M_L$	Focal Mech.	FMS (N1)			FMS (N2)			Ref.
	yyyy	mm	dd						Strike	Dip	Rake	Strike	Dip	Rake	
DSZ Events															
1	2001	02	08	76.188	28.559	30	4.2		44	85	65	304	25	169	1
2	2001	04	28	77.090	28.557	04.1	3.8		76	48	37	318	63	131	1
3	2001	05	17	76.793	28.946	24.7	3.2		171	24	36	48	76	110	1
4	2001	07	07	77.686	29.468	15.1	3.3		1	40	44	234	64	121	1
5	2001	08	10	77.192	28.903	13.2	3.2		190	83	133	288	44	11	1
6	2001	09	12	76.511	28.684	15.0	3.4		323	14	154	79	84	78	1
7	2001	10	20	77.239	29.248	24.4	3.3		84	32	14	342	83	122	1
8	2002	05	10	76.679	28.920	14.9	3.0		66	13	23	313	85	102	1
9	2002	05	13	77.277	29.293	11.9	3.1		48	28	115	201	65	78	1

SN	Date			Long. (E)	Lat. (N)	Depth (km)	$M_L$	Focal Mech.	FMS (N1)			FMS (N2)			Ref.
	yyyy	mm	dd						Strike	Dip	Rake	Strike	Dip	Rake	
10	2002	06	19	76.466	29.235	13.7	3.5		100	26	47	326	72	108	1
11	2002	12	15	76.782	28.932	10	3.2		323	32	124	104	64	71	1
12	2003	04	02	76.612	29.025	15	3.1		87	26	22	337	81	114	1
13	2003	04	09	77.401	28.406	18	3.4		110	17	149	230	81	75	1
14	2003	06	16	77.435	28.420	15.1	3.1		35	37	79	228	54	98	1
15	2003	08	28	76.640	29.115	7.4	3.5		75	42	161	179	77	50	1
16	2003	09	13	76.707	29.021	5	3.4		323	17	96	136	73	88	1
17	2003	12	22	76.414	29.223	7.3	3.4		348	55	148	98	64	40	1
18	2004	03	17	76.889	28.957	14.2	3.2		355	82	124	97	35	14	1
19	2004	07	27	76.617	28.943	12.9	3.9		8	23	133	143	74	74	1
20	2012	03	05	76.603	28.748	14	4.9		348	48	131	115	56	54	2
21	2020	04	12	77.268	28.791	14.5	3.5		13	55	135	253	55	-45	3
22	2008	06	10	77.86	29.41	29.48	2.0		129	10	-112	331	81	-86	4
23	2008	04	27	78.21	29.37	44.7	1.9		176	23	-37	301	76	-109	4
24	2007	11	30	78.54	29.40	19.31	1.9		162	35	-78	327	56	-98	4
25	2007	07	09	78.10	29.34	21.5	2.5		97	34	-100	289	57	-83	4
26	2007	03	09	78.44	29.31	24.1	2.1		87	20	-94	271	70	-89	4
27	1966	08	15	78.93	28.67	5 (ISC)	5.6		P( $\phi, \theta$ )=(222, 76), T( $\phi, \theta$ )=( 42,14), B( $\phi, \theta$ )=(132, 0) [ $\phi$ - Azimuth, $\theta$ - plunge]						5
ADFB Events excluding DSZ															
28	2010	09	02	71.97	23.82	12.0	4.2		300	94	63	30	-77	-114	6
29	2017	03	13	72.03	24.54	9.0	4.1		223	77	46	50	-115	-66	6
30	2010	10	24	71.99	24.82	7.0	3.8		35	153	69	39	-56	-145	6
31	2015	06	28	71.82	24.37	10.0	3.7		203	56	16	76	-122	-81	6
32	2015	03	19	72.71	24.05	4.0	3.4		249	150	77	56	35	164	6

SN	Date			Long. (E)	Lat. (N)	Depth (km)	$M_L$	Focal Mech.	FMS (N1)			FMS (N2)			Ref.
	yyyy	mm	dd						Strike	Dip	Rake	Strike	Dip	Rake	
33	2016	05	12	72.68	24.29	6.0	3.4		216	118	71	68	-157	-20	6
34	2015	06	28	71.82	24.42	25.0	3.1		269	32	46	60	-43	-127	6
35	2014	11	19	72.21	24.44	3.0	3.0		18	247	54	48	-24	-53	6
36	2011	11	07	72.66	24.33	7.0	3.3		16	90	-148	286	58	0	7
37	2007	12	15	71.93	24.39	1	4.4		44	86	94	178	5	44	7
38	2010	09	02	71.87	23.84	13	4.0		156	47	99	323	44	81	7
39	2011	11	30	72.87	24.78	3	4.1		26	69	-120	264	36	-38	7
40	2010	10	24	71.98	24.82	12	3.5		15	81	-170	284	80	-9	7
41	1969	10	24	72.4	24.8	15	5.3		P( $\phi, \theta$ )=(8, 0), T( $\phi, \theta$ )=( 98, 55), B( $\phi, \theta$ )=(278, 35) [ $\phi$ - Azimuth, $\theta$ - plunge]						8

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