



GOVERNMENT OF INDIA
GEOLOGICAL SURVEY OF INDIA

**A note on the moderate earthquake of magnitude 5.9 MI occurred on 23rd
April, 2019 in Arunachal Pradesh**

A moderate earthquake of magnitude 5.9 MI occurred at a depth of 16.6 Km at 20:15:54 (UTC) on 23rd April, 2019 and 01:45:54 (IST) on 24th April, 2019 in West Siang District of Arunachal Pradesh. The epicentre is located at Lat 28.489⁰ N and Lon 94.565⁰ E in the Main Central Thrust (MCT) boundary zone. The epicentre of the earthquake (Fig.1) has been located using data recorded at Seismo-Geodetic observatories of GSI located at Hutbay, Jaipur, Jammu, Lucknow, Mangan, Nagpur, Pune and Thiruvananthapuram. The waveform and the location parameter of the event are presented in Fig. 2 (a & b)

The fault plane solution NP1 234° 15° 62° and NP2 82° 77° 97° of the event (source: USGS) indicates thrust faulting dipping towards northwest direction along the dipping direction of MCT.

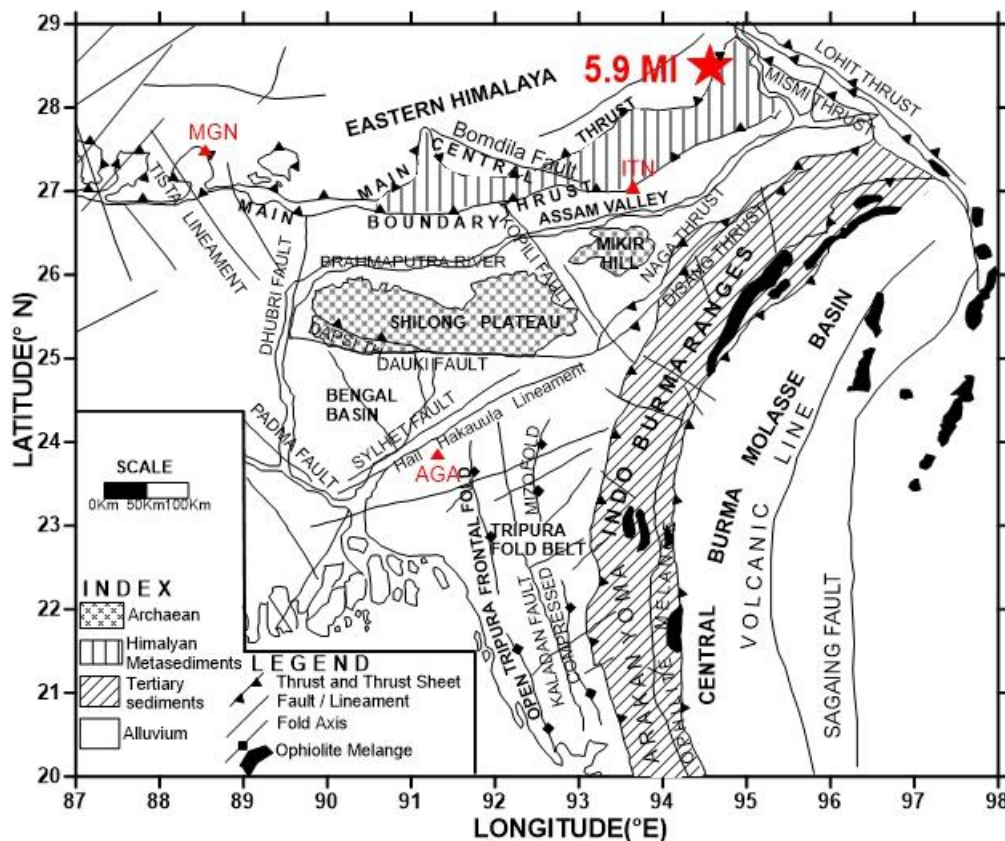


Fig1. Tectonic map of NE India and surroundings (after Evans, 1964 and Krishnan, 1960). The red star shows the epicentre of the earthquake. The Triangles indicate the location of the Seismo-geodetic Observatories of GSI (AGT: Agartala, ITN: Itanagar and MGN: Mangan) in NE India.

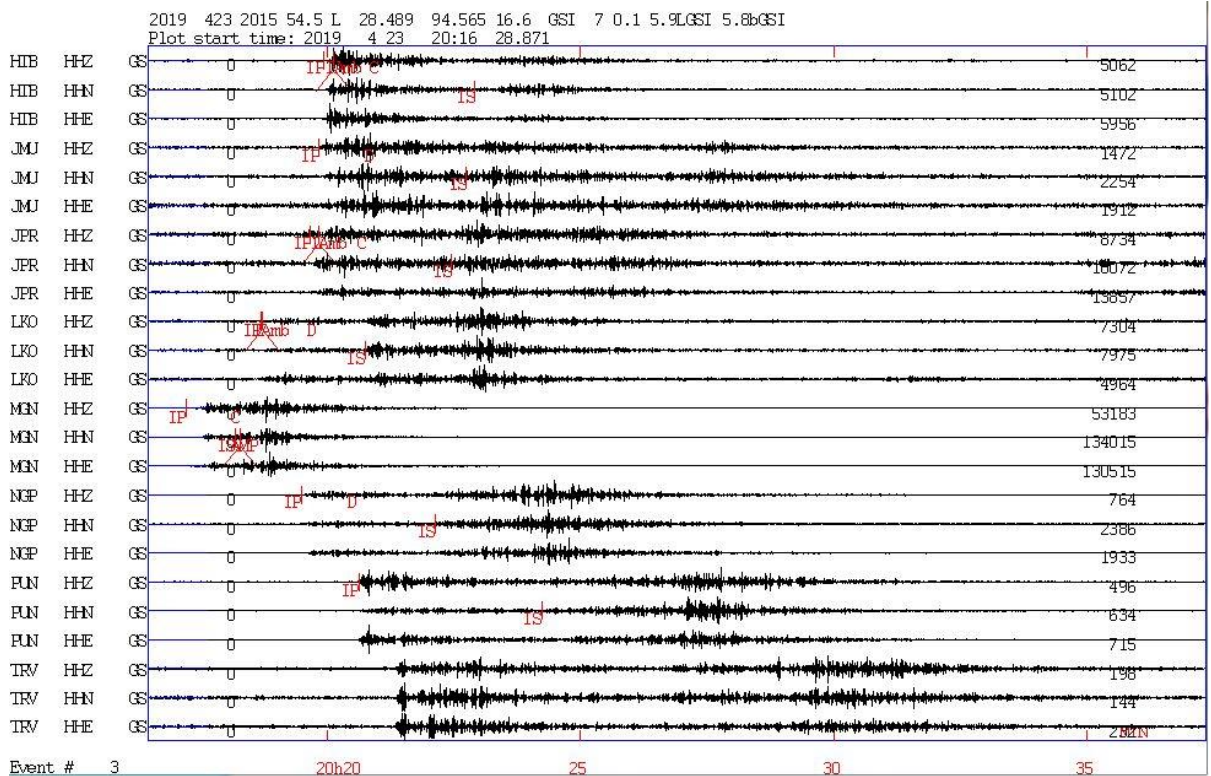


Fig. 2(a) Waveform of the earthquake

date	hrmn	sec	lat	long	depth	no	m	rms	damp	erln	erlt	erdp		
19 423	2015	54.54	2829.32N	94 33.9E	16.6	12	3	0.07	0.000	8.2	5.7	10.1		
stn	dist	azm	ain	w	phas	cal	phs	hrmn	tsec	t-obs	t-cal	res	wt	di
MGN	603	260.8	53.1	0	P	C	PN5	2017	12.8	78.21	78.29	-0.08	1.00	11
MGN	603	260.8	53.1	0	S		SN5	2018	10.8	136.26	136.22	0.04	1.00	13
MGN	603	260.8			AMP			2018	16.6	142.1				
LKO	1355	265.7	50.9	0	P	D	PN6	2018	41.5	167.00	166.90	0.10	0.77*	6
LKO	1355	265.7			Iamb			2018	43.2	168.6				
LKO	1355	265.7	50.9	0	S		SN6	2020	44.9	290.39	290.41	-0.02	0.77*	10
NGP	1763	246.1	50.9	0	P	D	PN6	2019	29.5	214.96	214.89	0.06	0.40*	3
NGP	1763	246.1	50.9	0	S		SN6	2022	8.3	373.81	373.92	-0.11	0.40*	7
JPR	1856	268.9	50.9	0	P	C	PN6	2019	40.5	225.93	225.86	0.07	0.31*	1
JPR	1856	268.9			Iamb			2019	50.5	236.0				
JPR	1856	268.9	50.9	0	S		SN6	2022	27.5	392.98	392.99	-0.01	0.31*	3
JMU	1941	288.8	50.9	0	P	D	PN6	2019	50.5	235.97	235.94	0.03	0.24*	5
JMU	1941	288.8	50.9	0	S		SN6	2022	44.9	410.40	410.53	-0.14	0.24*	13
HTB	1991	186.5	50.9	0	P	C	PN6	2019	56.3	241.80	241.68	0.12	0.19*	8
HTB	1991	186.5			Iamb			2020	7.9	253.4				
HTB	1991	186.5	50.9	0	S		SN6	2022	55.1	420.51	420.52	-0.01	0.19*	22
PUN	2377	246.9	50.9	0	P		PN6	2020	38.2	283.66	287.10	-3.45	0.00*	0
PUN	2377	246.9	50.9	0	S		SN6	2024	14.2	499.63	499.56	0.07	0.00*	0

Return to continue, q to end listing

MGN	HN	hdist:	603.2	amp:	29386.2	T:	0.5	ml =	5.9
JPR	HZ	dist:	1856.0	amp:	305.7	T:	0.4	mb =	5.8
HTB	HZ	dist:	1991.0	amp:	671.9	T:	0.7	mb =	5.9

2019 423 2015 54.5 L 28.489 94.565 16.6 GSI 7 0.1 5.9L GSI 5.8bGSI

Fig. 2(b) Location parameters of the earthquake