



Geophysical Research Letters

Supporting Information for

**Joint inversion of receiver functions and apparent
incidence angles to determine the crustal structure of Mars**

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Introduction

This document provides information on the search criteria needed to retrieve the InSight and terrestrial seismic data used in the manuscript along with the 1D probability distributions for v_s , v_p/v_s ratio and noise parameters. Terrestrial data for seismic stations VSU are publicly available and can be obtained from EIDA

<http://eida.gfz-potsdam.de/webdc3/>

Event	Time	Lat. (°N)	Long. (°E)	Type	Quality	Filter Freq.
S0173a	2019-0523T02:19:33	3.45	164.48	LF	A	0.1-0.8
S0183a	2019-06-03T02:22:25	15.09	179.59	LF	B	0.1-0.8
S0235b	2019-07-26T12:19:16	11.59	163.79	BB	A	0.3-0.8
S0784a	2021-02-09T12:11:32	-	-	BB	B	0.3-0.8
S0809a	2021-03-07T11:09:26	5.40	165.55	LF	A	0.3-0.8
S0820a	2021-03-18T14:51:33	4.9	165.91	LF	A	0.3-0.8
S01048d	2021-11-07T22:04:04	-1.10	165.31	LF	A	0.12-0.8
S01133c	2022-02-03T08:08:25	3.89	165.89	BB	A	0.12-0.8

Table S1. Event information for InSight data

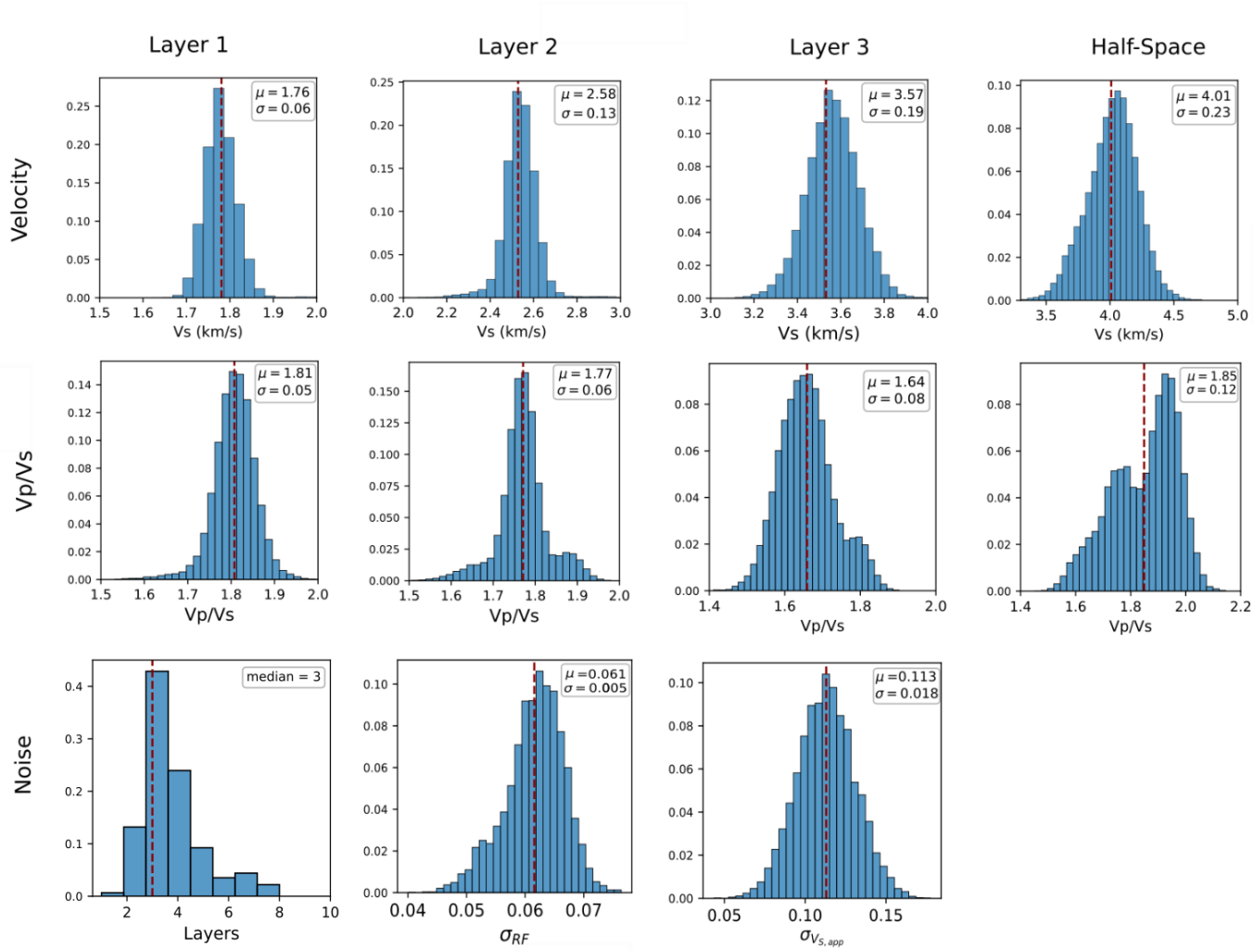


Figure S2. 1D distributions of model parameters

Station code	Network code	Latitude (°N)	Longitude (°E)
VSU	GE	58.462	26.7347

Table S3. Station information for seismic station VSU

Event	Time
2008-10-06	08:39:04
2006-05-11	17:32:03
2007-06-02	21:44:37
2007-07-30	22:51:45
2010-03-30	17:04:46
2008-06-27	11:50:25
2008-06-28	13:04:59
2010-05-31	20:01:54
2010-06-12	19:37:18
2006-06-21	12:45:28
2007-10-04	12:51:26
2010-05-09	06:10:37
2006-08-11	21:05:24
2008-07-14	04:56:00
2010-04-06	22:26:00
2006-05-16	15:39:50
2009-09-30	10:27:24
2009-08-16	07:49:58
2007-09-20	8:42:57
2008-02-25	21:13:59
2008-02-25	18:17:45
2009-10-01	2:04:18
2008-05-18	12:29:08

Table S4. Event information for station VSU (large-distance case)

Event	Time
2010-12-23	14:10:27
2008-05-25	19:28:20
2006-10-01	09:16:04
2006-09-30	18:00:28
2009-01-15	17:59:43
2007-01-13	04:33:20
2007-10-02	18:10:12
2010-07-18	06:06:56
2008-05-02	01:43:50
2006-08-26	23:50:53
2006-05-10	2:53:07
2006-07-08	20:50:13
2006-09-18	03:56:16
2007-08-15	20:32:38

Table S5. Event information for station VSU (small-distance case)