



**Fig. S1.** The comparison of SLIPs generated for the coast south of Bohai Bay (latitude 37°N – 33°N; adopted from Lambeck et al., 2014) and GIA models employed in this study.

**Table S1.** Parameters used by GIA models employed in this study (SELEN) compared the model established by Bradley et al. (2016; BRAD).

Parameter/Result	BRAD	ANU (SELEN)	ICE 5G (SELEN)	ICE 6G (SELEN)
Lithospheric thickness (km)	96	65	90	90
Upper mantle viscosity (Pa s)	$<1.5 \times 10^{20}$	$0.5 \times 10^{21}$	$0.5 \times 10^{21}$	$0.5 \times 10^{21}$
Lower mantle viscosity (Pa s)	$8 \times 10^{21}$	$10 \times 10^{21}$	$2.7 \times 10^{21}$	$3.2 \times 10^{21}$
Antarctic contribution to ESL (m) and end of melting (until ka)	28 until 1	30 until 1	17.5 until 4	13.6 until 4
Holocene highstand (m@ka)	$<0.5 @ 7$	$4.3 @ 6$	$3.4 @ 7$	$4.7 @ 6.5$

**Table S2.** Survey data and lithostratigraphy of cores.

Depth (m)	Alt. (m, asl)	Description
<i>Core DC01 (38°40'09", 116°39'10", ground altitude: +3.74 m)</i>		
1.0–6.50	2.74 to -2.76	Yellowish brown to grey clayey silt with rusting stains
6.5–9.40	-2.76 to -5.66	Yellowish grey silty clay with black peat layers in various depths
9.4–12.6	-5.66 to -8.86	Brown grey clayey silt with calcium nucleus at base (Pre-Holocene)
<i>Core QX01 (38°38'52", 116°48'58", ground altitude: +5.16 m)</i>		
1.0–5.00	4.16 to 0.16	Brown to grey clayey silt with thick laminations and rusting stains
5.0–9.10	0.16 to -3.94	Brownish grey clayey silt with thin (5 cm thick) layers of charcoal, organic material and shell fragments in various depths
9.1–11.4	-3.94 to -6.24	Brownish grey clayey silt with small amount of charcoal and shell fragments
11.4–13.8	-6.24 to -8.64	Grey to brownish grey clayey silt laminations, with black peat layers and a sharp contact at upper boundary
13.8–19.6	-8.64 to -14.4	Yellowish brown sandy silt (Pre-Holocene)
<i>Core QX03 (38°38'52", 116°53'43", ground altitude: +4.38 m)</i>		

Depth (m)	Alt. (m, asl)	Description
1.2–4.8	3.18 to -0.42	Dark brown clayey silt with small amount of charcoal. Calcium nucleus and shells in 2.9 – 3.1 m depth
4.8–8.9	-0.42 to -4.52	Dark greyish brown clayey silt with laminations and small amount of shell fragments
8.9–13.7	-3.52 to -9.32	Greyish brown to grey clayey silt with a black peat layer in 12.4-12.5 m depth
13.7–16.0	-9.32 to -11.6	Brown clayey silt, with rusting stains and thick laminations (Pre-Holocene)
<b>Core QX02</b> (38°38'24", 116°57'24", ground altitude: +3.57 m)		
1.0–3.90	2.57 to -0.33	Yellowish brown clayey silt with small amount of charcoal
3.9–11.3	-0.33 to -7.73	Brownish grey clayey silt, with shell fragments and rusting stains, and several organic-rich layers
11.3–16.6	-7.73 to -13.0	Yellowish brown clayey silt, with charcoal and fine sand at base, and black peat layers
16.6–20.3	-13.0 to -16.7	Yellowish brown clayey silt, with calcium nucleus developed in various sizes (Pre-Holocene)
<b>Core ZW15</b> (38°40'26", 117°13'20", ground altitude: +1.63 m)		
0.8–2.2	0.83 to -0.57	Brown clayey silt, with rusting stains, laminations and an increase in organic matter at 1.60 m of depth
2.2–12.6	-0.57 to -10.97	Greyish brown clayey silt, with small amount of marine shells, laminations throughout
12.6–15.2	-10.97 to -13.57	Grey clayey silt with peat layers at various depths
15.2–17.0	-13.57 to -15.37	Dark yellowish brown clayey silt, with rusting stains and calcium nucleus (Pre-Holocene)
<b>Core Q7</b> (38°39'24", 117°31'27", ground altitude: +3.46 m)		
0.0–7.0	3.46 to -3.54	Brown silt, with laminations and marine shells
7.0–18.7	-3.54 to -15.24	Dark grey clayey silt, with shell fragments
18.7–18.9	-15.24 to -15.44	Dark brown peaty clay overlying yellowish brown sandy sediment (the latter as Pre-Holocene)
18.9–25.0	-15.44 to -21.54	Yellowish brown silt sand (Pre-Holocene)
<b>Core CZ01</b> (38°22'29", 116°46'31", ground altitude: +6.89 m)		
1.0– 6.4	5.89 to 0.49	Dark brown clayey silt, with fine laminations, charcoal, Fe/Mn concretion, and freshwater snails
6.4–15.4	0.49 to -8.51	Dark yellowish brown clayey silt, with rusting stains and calcium nucleus. Black peat layers in various depths
15.8–20.0	-8.91 to -13.11	Very dark greyish brown to very dark grey silt (Pre-Holocene)
<b>Core CZ02</b> (38°21'28", 116°54'50", ground altitude: +5.77 m)		
1.0–4.4	4.77 to 1.37	Dark yellowish brown clayey silt, with Fe/Mn concretion.
4.4–15.0	1.37 to -9.23	Brown to light greyish brown silt, with laminations, rusting stains and calcium nucleus. Black peat layers at various depths
15.0–20.0	-9.23 to -14.23	Yellowish brown silt, with rusting stains and calcium nucleus (Pre-Holocene)
<b>Core CZ03</b> (38°22'19", 117°06'29", ground altitude: +3.94 m)		
1.0–4.4	2.94 to -0.46	Dark yellowish brown clayey silt, with rusting stains and Fe/Mn concretion
4.4–9.3	-0.46 to -5.36	Dark grey brown clayey silt, with laminations and shell fragments. Organic clay and peat in various depths
9.3–15.0	-5.36 to -11.06	Grey silt with charcoal and two black peat layers
15.0–16.0	-11.06 to -12.06	Yellowish brown sandy silt (Pre-Holocene)
<b>Core CZ87</b> (38°31'39", 116°54'38", ground altitude: +4.46 m)		
0.0–5.8	4.46 to -1.34	Light grey to brown clayey silt, with laminations, Fe/Mn concretions and rusting stains

Depth (m)	Alt. (m, asl)	Description
5.8–11.5	-1.34 to -7.04	Yellowish brown clayey silt, with small amount of shell fragments
11.5–16.0	-7.04 to -11.54	Grey clayey silt, with charcoal, laminations and black peats
16.0–20.0	-11.54 to -15.54	Greyish brown silt (Pre-Holocene)
<b>Core CZ61</b> (38°33'29", 116°58'50", ground altitude: +3.76 m)		
0.0–4.5	3.76 to -0.74	Yellowish brown clayey silt and silt, with charcoal
4.5–9.7	-0.74 to -5.94	Brown to grey clayey silt, with marine shell fragments. Organic clay at various depths
9.7–14.7	-5.94 to -10.94	Very dark grey clayey silt, with laminations. Peats in various depths
14.7–18.0	-10.94 to -14.24	Yellowish brown clayey silt, with laminations and small amount of calcium nucleus (Pre-Holocene)
<b>Core CZ65</b> (38°34'47", 117°04'17", ground altitude: +2.96 m)		
0.0–3.8	2.96 to -0.84	Dark brown clayey silt, with laminations and charcoal
3.8–9.7	-0.84 to -6.74	Grey silt, with rusting stains, laminations and charcoal in upper and lower ends, marine shells in the middle
9.7–13.8	-6.74 to -10.84	Grey clay and silt, with laminations and charcoal and a black peat layer
13.8–16.6	-10.84 to -13.64	Brown to grey brown clayey silt, with Fe/Mn concretion, calcium nucleus and freshwater snails (Pre-Holocene)
<b>Core CZ80</b> (38°26'12", 116°53'39", ground altitude: +6.42 m)		
0.0–5.4	6.42 to 1.02	Light yellowish brown to greyish brown clayey silt, with laminations, rusting stains, charcoals and dark grey peats
5.4–10.0	1.02 to -3.58	Dark grey clayey silt and fine silt, with organic clay in various depths
10.0–14.0	-3.58 to -7.58	Grey fine silt and clayey silt, with rusting stains and charcoal. Black peats in various depths
14.0–17.0	-7.58 to -10.58	Yellowish brown clayey silt, with laminations in upper layer (Pre-Holocene)
<b>Core CZ85</b> (38°28'09", 117°01'10", ground altitude: +4.61 m)		
0.5–3.6	4.11 to 1.01	Dark yellowish brown clayey silt, with plant roots at surface, and charcoals, Fe/Mn concretions in the lower part
3.6–8.8	1.01 to -4.19	Brown clayey silt, with rusting stains, charcoals. Organic clay in various depths
8.8–15.8	-4.19 to -11.19	Dark grey silt, with charcoal and black peats
15.8–17.7	-11.19 to -13.09	Light grey clayey silt, with a few calcium nucleus at base (Pre-Holocene)
<b>Core CZ66</b> (38°31'29", 117°07'59", ground altitude: +3.87 m)		
1.0–3.6	2.87 to 0.27	Yellowish brown clayey silt, with Fe/Mn concretion in lower part
3.6–6.3	0.27 to -2.43	Yellowish brown clayey silt, with charcoal and organic clay in various depths
6.3–10.8	-2.43 to -6.93	Yellowish brown silt, with rusting stains and small amount of marine shells
10.8–14.0	-6.93 to -10.13	Light yellowish grey to grey silt and clay, with charcoal and black peats
14.0–16.6	-10.13 to -12.73	Greyish brown clayey silt, with Fe/Mn concretion, freshwater snails and shells (Pre-Holocene)