

Probabilistic Seismic Hazard Maps

To modelling EQs without specified source faults, the upper limit of magnitude $M^u = M7.3$ for onshore, and $M^u = M7.5$ for offshore are setup.

※ It is assumed that Eq in Koizu-Matsuda fault zone simultaneously occurs once in several times of an occurrence of M8 class EQs of Sagami Trough.

Map of Japan showing major active fault zones and earthquake occurrence regions.

Legend:

- Major Subduction-Zone Earthquakes
- Occurrence Region of the Subduction-Zone Earthquakes
- Earthquake plane of major active fault zone
- Other Active Faults

[Label of subduction-zone earthquake]

EQs in Fukushima-ken-Oki

Approx. **M 7.4** Around **10%**

EQs without specified source faults

Interplate **M_s7**: About 10% **M_s8**: About 7% **M⁺ 8.2**
Intraplate **M_s7**: About 10% **M_s8**: About 5% **M⁺ 8.2**

Upper limit for the magnitude of earthquakes without specified source faults

EQs in Sagami Trough

M 8 class (M7.9~M8.6) Nearly **0~5%**
Around **M 7** (M6.7~M7.3) Around **70%**

a Nankai Trough EQs

M 8 ~ 9 class Around **70%**

EQs in Tokachi-Oki and Nemuro-Oki

e-1 Tokachi-Oki Approx. **M 8.1** **2~6%**
e-2 Nemuro-Oki Around **M 7.9** Around **50%**
e-3 The case of correlated occurrence Around **M 8.3**

EQs without specified source faults

Interplate **M_s7**: About 90% **M_s8**: About 7% **M⁺ 8.0**
Intraplate **M_s7**: About 50% **M_s8**: About 5% **M⁺ 8.2**

Shikotanto-Oki EQ and Etorofuto-Oki EQ

f Shikotanto-Oki Approx. **M 7.8** Around **60%**
g Etorofuto-Oki Approx. **M 8.1** **60~70%**

EQs without specified source faults

Interplate **M_s7**: Nearly 100% **M_s8**: About 20% **M⁺ 8.0**
Intraplate **M_s7**: About 90% **M_s8**: About 10% **M⁺ 8.2**

EQs in Northern Sanriku-Oki

d Approx. **M 8.0** Approx. **M⁺ 8.2** **2~20%**
(Other EQs except characteristic EQs) **M 7.1~7.6** Around **90%**

EQs without specified source faults

Interplate **M_s7**: About 80% **M_s8**: About 0.7% **M⁺ 7.9**
Intraplate **M_s7**: About 8% **M_s8**: About 0.1% **M⁺ 8.2**

• **Mt**: Tsunami magnitude scale

EQs in Central Sanriku-Oki

EQs without specified source faults

Interplate **M_s7**: About 30% **M_s8**: About 3% **M⁺ 8.2**
Intraplate **M_s7**: About 2% **M_s8**: About 0.1% **M⁺ 8.2**

Miyagi-ken-Oki Earthquake and EQs close to the offshore trenches in Southern Sanriku-Oki

Miyagi-ken-Oki Approx. **M 7.4** Unknown
(Other EQs except characteristic EQs) **M 7.0~7.3** Around **60%**

EQs close to the offshore trenches in Southern Sanriku-Oki

(Other EQs except characteristic EQs) Around **M 7.9** Nearly **0%**
M 7.2~7.6 Around **50%**

EQs without specified source faults

Interplate **M_s7**: About 60% **M_s8**: About 8% **M⁺ 8.4**
Intraplate **M_s7**: About 4% **M_s8**: About 0.3% **M⁺ 8.2**

C Great East Japan EQ (2011 type)

M⁺ 8.4 ~ 9.0 Nearly **0%**

• **Mw**: Moment magnitude scale

EQs near by the offshore trenches in the Sanriku-Oki to Boso-Oki regions (Tsunami EQs)

Approx. **M⁺ 8.6~9.0** Around **30%**
(Around 7% in specified area)

EQs without specified source faults

Interplate **M_s7**: About 80% **M_s8**: About 7% **M⁺ 8.0**
Intraplate **M_s7**: About 20% **M_s8**: About 0.7% **M⁺ 8.0**

• **Mt**: Tsunami magnitude scale

EQs near by the offshore trenches in the Sanriku-Oki to Boso-Oki regions (normal faults type)

Approx. **M 8.2** Approx. **M⁺ 8.3** **4~7%**
(Around 1~2% in specified area)

EQs without specified source faults

Interplate **M_s7**: About 80% **M_s8**: About 7% **M⁺ 8.0**
Intraplate **M_s7**: About 20% **M_s8**: About 0.7% **M⁺ 8.0**

• **Mt**: Tsunami magnitude scale

EQs in Fukushima-ken-Oki

Approx. **M 7.4** Around **10%**

EQs without specified source faults

Interplate **M_s7**: About 60% **M_s8**: About 7% **M⁺ 8.2**
Intraplate **M_s7**: About 10% **M_s8**: About 0.9% **M⁺ 8.2**

EQs in Ibaraki-ken-Oki

M 6.9~7.6 Around **70%**
(Repeated interplate EQ) **M 6.7~7.2** Around **90% or more**

EQs without specified source faults

Interplate **M_s7**: About 70% **M_s8**: About 10% **M⁺ 8.3**
Intraplate **M_s7**: About 10% **M_s8**: About 1% **M⁺ 8.2**

EQs in Boso-Oki

EQs without specified source faults

Interplate **M_s7**: About 40% **M_s8**: About 4% **M⁺ 8.3**
Intraplate **M_s7**: About 6% **M_s8**: About 0.5% **M⁺ 8.2**

[Major active fault zone]

No.	Earthquake name	No.	Earthquake name	No.	Earthquake name
1	Shibetsu fault zone	57	Morimoto/Togashi fault zone	121	Fukuchiyama fault zone
2	Tokachi-heiya-toen fault zone	58	Fukui-heiya-toen fault zone	122	Nishiyama fault zone
3	Furano fault zone	59	Nagaragawa-joryu fault zone	123	Umi fault
4	Mashike-sanchi-toen fault zone	60	Nobi fault zone	124	Kego fault zone
5	Tobetsu fault	61	Sekigahara fault zone	125	Hinata-Okasagi-toge fault zone
6	Ishikari-teichi-toen fault zone	62	Nosaka/Shufukuji fault zone	126	Minoru fault zone
7	Kuromatsunai-teichi fault zone	63	Kohoku-sanchi fault zone	127	Saga-heiya-hokuen fault zone
8	Hakodate-heiya-seien fault zone	64	Biwako-seigan fault zone	128	Begpu-Haneyama fault zone
9	Aomori-wan-seigan fault zone	65	Yoro-Kuwana-Yokkaichi fault zone	129	Unzen fault group
10	Tsugaru-sanchi-toen fault zone	66	Suzuka-toen fault zone	130	Futagawa fault zone
11	Oritsume fault	67	Suzuka-seien fault zone	131	Hinagu fault zone
12	Noshiro fault zone	70	Tongu fault	132	Midorikawa fault zone
13	Kitakami-teichi-seien fault zone	71	Nunobiki-sanchi-toen fault zone	133	Hitooyoshi-bonchi-nan'en fault zone
14	Shizukuishi-bonchi-seien/Mahiru-sanchi-toen fault zone	72	Kizugawa fault zone	134	Izumi fault zone
15	Yokote-bonchi-toen fault zone	73	Mikata/Hinagore fault zone	135	Koshiki fault zone
16	Kitayuri fault	74	Yamada fault zone	136	Ichiki fault zone
17	Shiryo-bonchi fault zone	75	Nara-bonchi-toen fault zone	141	Sekiya fault
18	Yamagata-bonchi fault zone	76	Arima-Takatsuki fault zone	142	Uchinokomori fault
19	Shonai-heiya-toen fault zone	77	Koma fault zone	143	Katashinagawa-sagan fault
20	Nagamachi-Rifu	78	Mitoku/Kyoto-Nishiyama fault zone	144	Okubo fault
21	Fukushima-bonchi-seien fault zone	79	Rokko/Awajishima fault zone	145	Ota fault
22	Nagai-bonchi-seien fault zone	80	Uemachi fault zone	146	Nagano-bonchi-seien fault zone (Shiranogawa fault zone)
23	Futaba fault	81	Chuo-kozen fault zone	147	Fukaya fault zone
24	Alzu-bonchi-seien/-toen fault zone	82	Yamasaki fault zone	148	Ayasegawa fault
25	Kushigata-sannmyaku fault zone	84	Nagao fault zone	149	Ogose fault
26	Tsukioka fault zone	87	Itukaichi fault zone	150	Tachikawa fault zone
27	Nagaoka-heiya-seien fault zone	88	Iwakuni fault zone	151	Kanagawa-teichi fault zone
28	Tokamachi fault zone	90	Kikukawa fault zone	152	Miura-hanto fault group
29	Kiso-sannmyaku-seien fault zone	97	Ise-wan fault zone	153	Isehara fault
30	Sakaitoge/Kamiya fault zone	98	Osaka-wan fault zone	154	Shiozawa fault zone
31	Atotsugawa fault zone	99	Sarobetsu fault zone	155	Hirayama-Matsuda-kita fault zone
32	Takayama/Oppara fault zone	101	Hanawa-higashi fault zone	156	Sone-kyuryo fault zone
33	Ushikubi fault	102	Takada-heiya fault zone	157	Minobu fault
34	Shokawa fault zone	103	Muikamachi fault zone	158	Kitazu fault zone
35	Inadani fault zone	105	Uozu fault zone	159	Itoki fault
36	Atera fault zone	106	Ube fault zone (Suonada fault group)	160	Inatori fault zone
37	Byobuyama/Enasan fault zone	107	Akinada fault group	161	Irozaki fault
38	Ochigata fault zone	110	Miyako-jima fault zone	162	Holawa-Shizuka-kozen fault zone (northern part, central part, southern part)
39	Tonami-heiya fault zone/Kurehama fault zone	120	Kozuka-higashi fault zone		

PSHM $P(I_{\text{IMA}} \geq 6^-)$ within 30 years starting 2016/01/01 and Long-term evaluation for major earthquakes

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