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## Risk of big quake in Tokyo area within 4 years may be 70%: institute

Monday 20 February 2012, by Kyodo News, Mainichi Shimbun (Date first published: 26 January 2012).

TOKYO (Kyodo) — The risk of a big earthquake hitting the southern Kanto region including Tokyo within the next four years could be as high as about 70 percent, according to a study compiled by Monday by a team of researchers at the University of Tokyo's Earthquake Research Institute.

The figure is the same as the 70 percent chance of a quake of around magnitude 7.0 in the region during the next 30 years estimated by the government's Headquarters for Earthquake Research Promotion on the basis of the intervals between large quakes in the past.

Naoshi Hirata, a professor at the institute and member of the team, said the risk of a big quake may have risen due to the magnitude 9.0 earthquake in March 2011 in northeastern Japan.

Since the March disaster, seismic activity has been intensifying in the southern Kanto region and quakes with a magnitude of more than 3.0 have occurred about five times more frequently than in usual years.

If the seismic activity continues at the current pace, the risk of a magnitude-7.0-class quake in the region would be about 70 percent over the next four years, according to the team.

## Kyodo Press, January 23, 2012

## At least 7 M9 level quakes hit Japan over past 3,500 yrs: study

OSAKA (Kyodo) — At least seven magnitude 9 level earthquakes have occurred in the Pacific Ocean along Japan from Hokkaido to the Sanriku region over the past 3,500 years, causing huge tsunami waves to hit coastal areas, a study by a Hokkaido University professor showed Wednesday.

Kazuomi Hirakawa, professor of natural geography at the university, drew the conclusion by an analysis of deposits believed to have been carried by tsunami at more than 400 locations from Nemuro in the northernmost main island of Hokkaido to Kesennuma, Miyagi Prefecture, in the Sanriku region in northeast Japan.

Deposits of seabed gravel and fossilized marine life washed ashore by each of the seven huge tsunami, other than the trace of the magnitude 9.0 quake and tsunami on March 11, 2011, were identical in ages at almost all of the survey locations, Hirakawa said.

The analysis, which covers a much wider area than any other past surveys, showed that the deposits are considered to have been created by huge tsunami some 3,500 years ago, 3,000 years ago, 2,400

years ago, 2,000 years ago, in 869 when the Jogan Quake occurred, between the  $12^{th}$  and  $13^{th}$  centuries and in the early  $17^{th}$  century.

The analysis also indicates that there are four seismic centers along the Chishima Trench off northeast Hokkaido to the Japan Trench off northeast Japan, Hirakawa said.

The four centers caused quakes at intervals ranging from several hundred to 1,000 years and two or more of them may have produced large quakes simultaneously 2,400 and 3,500 years ago, according to the professor.

The study suggests that residents in the coastal areas in northeastern and northern Japan are exposed to the risk of tsunami triggered by quakes at the four seismic centers.

Chances of a huge quake are high in the area stretching from off Nemuro to Shikotan, one of the Kuril Islands, as about 400 years have passed since the last one occurred there and the north of the Sanriku coast where large quakes have not occurred for a long time, he said.

The study by Hirakawa will be included in the latest edition of the "Kagaku" (Science) magazine to be published by Iwanami Shoten Publishers on Thursday.

Mainichi Shimbun, January 26, 2012 http://mdn.mainichi.jp/mdnnews/national/archive/news/2012/01/26/20120126p2g00m0dm042000c.ht

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