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### IIIT-H team maps quake zones

January 30, 2012 DC Hyderabad

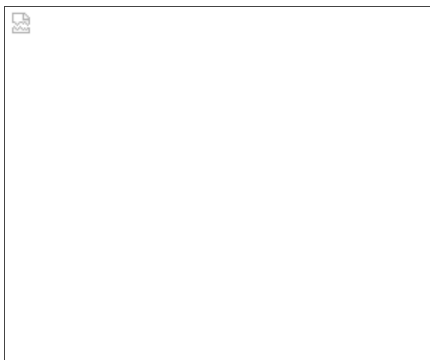
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Earthquake micro-zonation studies conducted in Vijayawada have revealed that Gunadala, Bhavanipuram and Kanuru areas will suffer the maximum impact in case a powerful earthquake hits the city.

The soil in these areas is silt clay with huge depths of "soil filled up". This results in a high amplification factor (shaking of the ground) and would cause maximum damage in case of a major quake.

Researchers at the earthquake engineering research centre of the International Institute of Information Technology, Hyderabad, have

found 22 seismic sources in and around Vijayawada that could affect a number of localities in the city. The IIIT-H team comprising M. Akhila, S. Silpa Chowdary and D. Neelima Satyam selected Vijayawada for the earthquake site effect studies, as it is the only major place in the State that falls in earthquake zone III.

The soil amplification factor (SAF) for 14 locations in Vijayawada was calculated to predict the impact of a major earthquake on the city. The SAF varied between 1.55 and 5.01. The higher the SAF, the higher the probability of damage. Kanuru recorded the highest SAF of 5.01, followed by the Bhavanipuram Housing Colony with 4.05, the Bank Colony in Gunadala with 3.1, Moghalrajpuram with 2.25, Ryves Canal in Gunadala with 2.4 and Ramalingeswaranagar with 1.6. The industrial estate in Kondapalli had an SAF of 1.85.

The damage will be quite high in areas with SAF above 2.5, moderate in areas with SAF between 2.5 and 2, and low in areas with SAF less than 2. The geography of Vijayawada consisting of rock formations and a low water table makes it vulnerable to quakes. IIIT-H said the soft soil may lead to local intensity increments. Gunadala and Bhavanipuram have predominantly silty clay while Kanuru and Sethannapet have silty clay and sandy silt soils. Kondapally has equal amounts of silty clay and silty sand. Ramaling-eswaranagar has high amounts of clayey sand while Moghalrajpuram is predominantly clayey sand, sand silt and rock.

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