



## **Mexico, more resilient to earthquakes, but with important challenges: IPN**

- **ESFM professor and researcher, Fernando Angulo Brown, proposed to inculcate the culture of seismicity from an early age.**
- **There are enough seismic sensors in the Guerrero gap; it is necessary to follow up on the geological behavior of this region**
- **He called for stricter building regulations and soil mechanics restrictions.**

Mexico City and the areas that have experienced disasters due to earthquakes have risen in the face of catastrophe. As a result, Mexico has become a more resilient community with significant challenges, such as training scientists in the field of seismic phenomena and instilling a culture of earthquake awareness from an early age. This was emphasized by the scientist from the Instituto Politécnico Nacional (IPN), Fernando Angulo Brown.

Angulo Brown, a professor and researcher at the Escuela Superior de Física y Matemáticas (ESFM) and an expert in the nonlinear study of the Earth's crust behavior, emphasized that despite global engineering advancements, buildings are still being constructed in high-risk zones. He stated, "In all the major earthquakes we have experienced in the 20th and 21st centuries, there have been many building collapses."

Therefore, he pointed out that buildings should not be constructed in areas where collapses have occurred due to such natural phenomena. As an example, he mentioned the Nuevo León building in the Nonoalco Tlatelolco Urban Complex (where some of his relatives died in the 1985 earthquake, which motivated him to study earthquakes), which has now been transformed into a large garden.

He advocated for much stricter building regulations and soil mechanics restrictions to prevent construction in unsuitable locations, as this is where building-terrain interactions lead to collapses.

Angulo Brown, a pioneer in the installation of the first network of five electro-seismic stations in the Guerrero Gap, stressed that earthquakes cannot be predicted.



However, based on geoelectric patterns measured underground and the observation of outstanding tectonic stresses, there could be an indication of a seismic event.

He noted that there are sufficient seismic sensors in the Guerrero Gap area today. He warned that there are studies indicating that a considerable amount of energy has accumulated between the Cocos Plate and the North American Plate in the Zihuatanejo and Acapulco Gap because there have been no earthquakes exceeding 7.5 on the Richter scale. Hence, it is crucial to monitor the geological behavior of that region.

As a scientist recognized at Level III by the National System of Researchers (SNII), who has supervised 35 master's and 20 doctoral students in science and has shared his knowledge at IPN for over 55 years, Angulo Brown highlighted the need to encourage scientific vocations in Mexico, especially in areas with a significant deficit. These areas are essential for addressing natural phenomena that endanger people's lives.

"It is necessary to create a national program to promote scientific vocations to identify talents that can have outstanding careers in the sciences. Countries like Israel have accumulated many Nobel prizes," he concluded.

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