# Consultation BDD

# RAP

## Type

TS-ANO2

## Coordination

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# Description

The French accelerometric strong-motion network (RAP-Epos-France, Réseau Accélérométrique Permanent, rap.epos-france.fr) aims at improving the knowledge on earthquake strong ground motion that could affect the French territory (mainland and overseas territories), and its effect on structures. Accelerometers have the required sensitivity to record high amplitudes without saturation effect in the frequency range of interest to civil engineering. The RAP sets up its stations where earthquake hazard is relatively the highest (West Indies, Alps, Provence and Pyrenees), and where seismicity rates are modest but not negligible (Fossé Rhénan, Ardennes, Massif Central, Massif Armoricain, Mayotte). One of the challenges is to install stations as close as possible to seismic sources in order to record strong motions at short distances (ideally within 20 km). The distribution and evolution of the network is therefore strongly dependent on the increasing knowledge of the French seismicity and potentially active faults. The RAP also aims to locate its stations in areas prone to seismic risk: specific geological sites where phenomena of wave amplification are expected, and urban areas with high human, economic or environmental stakes. Since 1997, the RAP coordinates, manages, promotes and disseminates earthquake data recorded in France, with the help of regional networks that operate the 160 strong-motion stations on field. The RAP central site is based in ISTerre laboratory (University Grenoble Alpes, OSUG), where is also located the national datacenter of the research infrastructure Epos-France (European Plate Observing System France, www.epos-france.fr), in which the RAP is in charge of the accelerometric part. The RAP central site collects the accelerometric data recorded by all the stations, updates and maintains the subsequent national database, improves the data quality control, provides a technical support to the regional networks, ensures technology intelligence and takes care of the renewal of the stations. It also defines new technologies and equipment that will be deployed on the whole network. Furthermore, the RAP is in charge of promoting the use of strong-motion data through its support to scientific research projects and to innovative experiments. The main scientific goal is to improve our understanding of the mechanisms involved in the generation of strong and destructive seismic motion. The supported researches relate to fault rupture processes (source effects), propagation and attenuation of seismic waves on the French territories, effects of local amplification due to geology (site effects), predictions of the expected ground motion in France, spatial variability of earthquake ground motion, adaptation of design spectra, dynamic response of structures and buildings for earthquake engineering (seismic vulnerability). Involved observatories and universities: OSUG, OCA, OMP, IPGP, OPGC, EOST, UBO, OSUNA. Other involved structures: IRSN, CEA, BRGM, UGE, CEREMA, BCSF-Rénass. Website: rap.epos-france.fr Les observations du RAP intègrent l’infrastructure de recherche Epos-France. L’ensemble des données sismologiques acquises dans le cadre des SNO en Terre Solide est distribué à travers le Résif-SI, système d’information de l’infrastructure de recherche Epos-France. Le centre de données national Résif, qui est connecté aux systèmes interopérables européens et internationaux ORFEUS-EIDA, EPOS et FDSN, héberge l’ensemble des données sismologiques françaises provenant des SNO français en Terre Solide. Des produits de données associés à la caractérisation des séismes sont développés sur la base des données hébergées dans ce centre et d’autres données d’observation, notamment celles des SNO Géodésie et Gravimétrie ; la production et la diffusion de ces produits sont coordonnées par l’Action Transverse Thématique Sismicité d'Epos-France, avec une forte implication du BCSF-Rénass.