

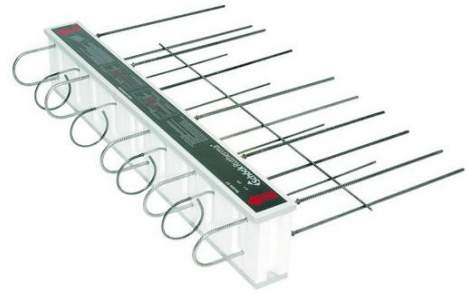


Name: **Abdelhafid NOUALI**  
Email: [a.nouali@univ-pau.fr](mailto:a.nouali@univ-pau.fr)  
Supervisors: Christian La Borderie and Olivier Maurel  
Partners/Funding: SIAME / SIMCO / ANCO / SCHOECK  
Status: PostDoc started on the 07/2018

## Thermal and mechanical (seismic) study of thermal breakers

### Abstract:

The objective of this project, in partnership between SIAME / ANCO / Schöck, is to study the case of a building internally insulated with a maximum facade length of 50m under seismic and/or thermal solicitations.



### 1. Seismic case

Evaluate the role of thermal breakers on the overall behavior of a typical building, by comparing the two cases: monolithic case and the case of interior insulation. We will observe in particular the role of the stiffness of the breakers on the eigen frequencies, as well as on the creation of possible parasitic eigen modes. It will also be necessary to verify that the insertion of the thermal breakers will not significantly modify the dynamic response of the building.

### 2. Thermal case

Three types of thermal solicitation are considered in the calculations: climatic conditions (daily temperature variations), radiative exchanges (solar radiation) and shrinkage. The temperature difference between the facade and the interior floor causes differential thermal expansion which could lead to plasticization of the circuit breaker reinforcements.

It will be necessary to evaluate the role of the distance between any fixed points as well as that of the stiffness of the breakers on the stress in the reinforcements and the repetition of the stresses on the floors.

