

# IGT-Kolloquium

**Wednesday, 21 November 2018**

## **Foundation Design in Seismic Areas: Case Studies**

Prof. Alain Pecker  
Ecole des Ponts ParisTech, France

13:45 pm, ETH Zurich, Hönggerberg, HCI J7

---

The development of large civil engineering projects in active seismic areas often faced the challenge of designing foundations that must sustain large seismic forces while preserving the functionality of the superstructure. The natural solution for such foundations seems to lie in the adoption of piles. However, end bearing piles are not always feasible and piled foundations are also subject to adverse effects which may not make them so attractive. Recent projects have shown that alternative, often innovative solutions, may lie in a combination of soil improvement with shallow foundation, caissons, or even piles.

The lecture will detail the pros and cons of the “classical” foundation solutions and illustrate on actual projects how combination of solutions may advantageously get rid of adverse effects while still providing a safe design and preserving constructability of the foundations. Special emphasis will put on the design of the foundations of the Rion–Antirion bridge (in Greece) since the adopted solution constitutes a real milestone in the design of foundations in seismic areas and has been reproduced on other projects.

## Prof. Alain Pecker

Prof. Alain Pecker is Professor at Ecole Nationale des Ponts et Chaussées (France) and at the European School for Advanced Studies in Reduction of Seismic Risk (IUSS of Pavia, Italy). He graduated from Ecole Nationale des Ponts et Chaussées (France) and obtained a Master of Science degree from the University of California, at Berkeley. Until 2015 he was Chairman and Managing Director of Géodynamique et Structure, a French engineering consulting firm in Earthquake Engineering that he founded 35 years ago; upon retiring he became independent consultant. He is former President of the French Society of Soil Mechanics and Geotechnical Engineering, Honorary President of the French Association on Earthquake Engineering and member of the executive committee of the European Association for Earthquake Engineering. He has been elected Member of the French National Academy of Technologies in 2000.

He has been consultant to major worldwide civil engineering projects in seismic areas, most notably the Vasco de Gama bridge in Lisbon, the Rion Antirion bridge in Greece, the Athens metro, the Second Severn bridge in UK, the Chiloe bridge in Chile, the Atlantic bridge in Panama and several nuclear power plants in France, South Africa and Iran.

