During recent years, the technology of dam protection has undergone major advancement. The increasing demand for safety in modern societies has created the need for cost-effective measures to protect critical infrastructure such as dams.

This situation has resulted in the drafting of new regulations and technical manuals in countries like Norway, Sweden, and the USA, among others. The technical manual *Overtopping Protection for Dams*, developed by the US Federal Emergency Management Agency (FEMA), will be presented at the seminar.

Although different dam protection techniques have been applied to many dams all over the world, many of the applications have not been tested and the technology is still not mature. Therefore, additional research is still necessary to improve current design criteria.

The latest advances and a portfolio of applications in representative case studies will be presented.

We look forward to welcoming you.
PROGRAMME OVERVIEW

Day 1: 24th November 2014

8:00  9:00  Secretariat opening. Welcome coffee.
9:00  9:30  Opening address.
J. Polimón / M.Á. Toledo.
10:30  11:45  Technical Session 1. Failure of embankment dams due to overtopping or accidental percolation.
11:45  12:15  Coffee break
13:45  15:15  Lunch
15:15  15:45  Visit to UPM hydraulics lab
15:45  16:30  Keynote 2. Embankment dam protections. R. Morán.
16:30  18:00  Technical Session 3. Embankment dams soft protection (II): rip-rap and rockfill toes.
18:30  19:00  Welcome coffee at CEDEX
19:00  19:30  Visit to CEDEX hydraulics lab
21:30  23:00  Welcome dinner

Day 2: 25th November 2014

8:30  9:00  Secretariat opening. Welcome coffee.
9:00  9:45  Keynote 3. Dam protection: Experiences from Scandinavia. P. Viklander.
11:15  11:45  Coffee break
13:15  14:45  Lunch
15:30  17:00  Technical Session 6. Masonry dam failure due to overtopping and its protections.
17:00  17:30  Coffee break
17:30  19:00  Technical Session 7. Miscellaneous topics related to dam protections

Day 3: Technical tour. 26th November 2014

7:00  11:30  Transfer to Barriga dam site
11:30  13:00  Visit to Barriga dam
13:00  14:30  Lunch
14:30  18:30  Transfer to Madrid centre
**Organization and Support**

This seminar is organized by the Dam Safety Research group (SERPA) of the Technical University of Madrid (UPM), the Agustín de Betancourt Foundation and the International Center for Numerical Methods in Engineering (CIMNE).

ICOLD, SPANCOLD, CEDEX and IAHR are official supporters of this seminar.

**Scientific Committee**

- Luis Balairón
- Alfredo Granados
- Riccardo Rossi
- Ignacio Escuder
- Tom Hepler
- Benjamín Suárez
- William Fiedler
- Antonia Larese
- Christopher Thornton
- Kathleen Frizell
- Rafael Morán
- Miguel Ángel Toledo
- Warren Frizell
- Eugenio Oñate
- Peter Viklander
- Luis Garrote
- José Polimón
- James Yang

**Sponsorship**

[http://www.prehorquisa.com](http://www.prehorquisa.com)

**Proceedings**

All the accepted full papers will be published in a hardcover book and distributed to all that pay normal registration fees. Abstracts of the presentations will be provided to the other workshop participants. A DVD containing the FEMA technical manual "Overtopping Protection for Dams" will be provided to the participants.

**Oral Presentations**

Oral presentations will be 15 minutes long. The duration will be strictly verified, and imposed, if necessary by the chairman. A period of five minutes will be devoted at the end of each presentation for questions and discussion. English is the workshop language (both for slides and oral presentations).

PowerPoint is the standard presentation format. Speakers are expected to upload their slides before the sessions directly onto the computer (by USB memory stick).
**Venue**

The venue of the seminar is:

Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos de Madrid (Technical University of Madrid)

Address: C/Profesor Aranguren (without number). Madrid. 28040

More detailed information (accommodation and local travel, among others) will be sent in future communications about the organisation of the seminar.

**Registration, deadlines and prices**

The registration period has been extended until completing seating capacity, and the registration deadline has been moved to 17 November 2014.

The registration prices (taxes included) are:

- **Seminar:** EUR 500*
- **Study tour (optional):** EUR 150

(*A reduction of 10% in the seminar registration fee is offered to all members of the organisation and supporting institutions)

The method of payment is a bank transfer indicating the name of the participant. The account data is:

**Holder:** Fundación Agustín de Betancourt

**BIC CODE:** CCOCESMM

**IBAN:** ES17 0234 0001 0898 0007 7028

For further information, visit: