



CSRN  
RCRP

Canadian Seismic Research Network  
Réseau canadien pour la recherche parasismique

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## **Workshop on the Seismic Isolation and Damping of Bridge Structures**

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The Canadian Seismic Research Network (CSRN) is pleased to invite you to a one day Workshop on Seismic Isolation and Damping of Bridge Structures. This workshop is organized as part of the research activities of CSRN Project 3.4: Upgrade of Bridges using Seismic Isolation and Damping.

*Le réseau canadien pour la recherche parasismique (RCRP) vous invite à participer à un atelier de travail sur l'isolation et l'amortissement sismiques des ponts. Cette rencontre est organisée dans le cadre du Projet 3.4 du RCRP: Upgrade of Bridges using Seismic Isolation and Damping.*

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**Date and Time: May 26, 2011; 8:30 am – 4:00 pm**

**Venue: École Polytechnique, Montréal, Pavillon Lassonde, Room M-1010**

**Conveners:**

**Prof. C. Christopoulos, University of Toronto (U of T), [c.christopoulos@utoronto.ca](mailto:c.christopoulos@utoronto.ca)**

**Prof. R. Tremblay, Ecole Polytechnique (EPM), Montreal, [robert.tremblay@polymtl.ca](mailto:robert.tremblay@polymtl.ca)**

**Language of Workshop:** Presentations will be made in either French or English. Discussions will be moderated in English with questions or contributions in both languages being translated by the Convenors.

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**Background:**

The use of seismic isolation is relatively recent in Canada and the seismic design guidelines are being reviewed for the 2014 edition of the CSA S6 code. Research projects on the seismic isolation and damping of bridges in Canada are currently underway as part of the CSRN.

**Contexte du workshop :**

*L'utilisation de systèmes d'isolation sismique au Canada est récente. Les règles de conception sismique seront revues pour l'édition 2014 de la norme CSA S6. Des travaux de recherche sont en cours sur l'isolation sismique des ponts dans le cadre du RCRP.*



## Workshop Goals:

To facilitate a discourse between the different invitees on the topic of seismic isolation and damping of bridges and to share past experiences with the seismic design of isolated bridges in Canada, to share practical experience with the use of code design clauses and facilitate interaction with members of the S6 code technical committee. To highlight current research projects to obtain feedback on the scope and intended outcomes from end users of the seismic isolation design clauses.

## Objectifs de la rencontre :

*Rencontre et échanges entre principaux intervenants. Partage d'informations et d'expérience de la part de ceux déjà impliqués dans le domaine de la conception des ponts avec des systèmes d'isolation. Possibilité de discuter des difficultés d'application du code S6 avec membres du comité technique qui seront présents. Présentation des projets de recherche en cours.*

## PROPOSED AGENDA

### 8.30AM – Coffee and Welcome

**9.00AM: Opening Remarks:** Denis Mitchell and Constantin Christopoulos

*Introduction to the CSRN, S6 Code and overview of Project 3.4 on Isolated and Damped Bridges*

### 9.15-10.30: Overview of Research Projects on Isolated and Damped Bridges

**(15 min. each including questions)**

Cassandra Dion, Dessau: *Hybrid Simulations on Isolated and Damped Bridges*

Frédéric Légeron, Université de Sherbrooke: *Isolation for Short and Medium Span Bridges*

Philippe Brisebois, McGill University: *Combination of Seismic and Thermal Displacements for the Design of Bridge Seismic Isolators*

Poulad Daneshvar, Ecole Polytechnique de Montréal: *Towards Performance-Based Design of Seismically Isolated Bridges in Eastern North America*

Viacheslav Koval – U of T / EPM: *Design Guidelines for Isolated and Damped Bridges in Canada*

### 10.30-10.45: Break

### 10.45-12.45: Presentations by Bridge Designers/Owners - (20 min/each, including questions)

Lotfi Guizani, ALG Groupe-Conseil: *Development & Application of Bridge Seismic Isolation in Quebec*

Sylvain Montminy, Delcan: *A Brief Overview of Seismic Isolation Bridge Projects*

Nikolay Velez, Dessau: *Réhabilitation sismique de ponts avec isolateurs*

Jean-François Martel, Cima+: *Rentabilité potentielle de l'isolation sismique - Étude paramétrique*

Steve Zhu, Buckland & Taylor: *Bridge Seismic Isolation - Some Western Canada Experience*

Peter Matusewitch, Arup: *Seismic Isolation of the A30 Bridge over the St. Laurent River*

### 12.45-1.30: Lunch

### 1.30-2.30: Presentations by Bridge Isolation and Damping System Suppliers – (20 min/each)

Pierre Lapalme, Goodco Z-Tech, *Seismic Equipments - Products and Projects Overview*

Karim Ladicani, LCL-Ponts *Shock Transmission and Damping Units - Testing and Projects*

Gordon Lawrence, Teratec, *Isolation and Viscous Damping Systems for Bridge Structures*

### 2.30 – 4.00: Moderated Discussion on Code Developments

Robert Tremblay: *General Overview of Chapter 4 of CSA S6 on Seismic Design & Review of CSA S6 Clause 4.10 on Seismic Base Isolation*

Constantin Christopoulos: *Identification of Archetype Bridges for Research Projects & Closing Remarks*

