Centre d'études interuniversitaire des structures sous charges extrêmes

CEISCE

**A strategic research cluster dedicated to the safety of civil engineering structures subjected to extreme effects induced by natural hazards, climate change and human activities**

# Program - Colloquium - May 9, 2022 - Polytechnique Montréal

*Moderator: Sylvain Renaud, Coordinator of CEISCE*

## 8 h 30 – 9 h 15 : Reception and set-up of posters (Galerie Rolland)

Coffee and pastries.

## 9 h 15 – 9 h 30 : Welcoming remarks (Amphithéâtre Bernard-Lamarre)

Prof. Najib Bouaanani, Director of CEISCE.

## 9 h 30 – 10 h 30 : Keynote presentation – Invited speaker (Amphithéâtre Bernard-Lamarre)

- **Climate change and structures (in French)** presented by Gilles Brien, a privileged witness to the evolution of climate for the past 40 years, particularly in Quebec, as a professional meteorologist, scientific communicator and author of books and television and radio programs.

## 10 h 30 – 11 h : Coffee break and posters session (Galerie Rolland – list of posters on next page)

Coffee break and exhibition of posters by CEISCE members.

## 11 h – 12 h : Presentations by CEISCE members (Amphithéâtre Bernard-Lamarre)

- **Athanasiou, A., Tirca, L., and Stathopoulos, T.** Concordia University – *A novel performance-based framework for the assessment of tall steel buildings under wind and earthquake.*
- **Freitas, M., BenFtima, M., Léger, P., and Bouaanani, N.** Polytechnique Montréal – *Structural Stability of Dams under Extreme Loads: 3D contribution of Shear Keys.*
- **Kraiem, M.-H., Khaled, A., and Nollet, M.J.** École de Technologie Supérieure – *Évaluation de la capacité latérale des murs en carré de madriers.*

## 12 h – 13 h 15 : Lunch and posters session (Galerie Rolland)

Lunch and exhibition of posters by CEISCE members.

## 13 h 15 – 14 h 45 : Presentations by CEISCE members (Amphithéâtre Bernard-Lamarre)

- **Bazarchi, E., Davaran, A., Mohebbi, S., Lamarche, C.P., Roy, N., and Parent, S.** Université de Sherbrooke – *The tallest modular building in Canada: development of structural concepts to resist seismic, wind, and transportation loads.*
- **Yang, S., Chouinard, L., and Langlois, S.,** McGill University – *Probability of Fretting Fatigue due to Aeolian Vibrations.*
- **Tavakoli, S., Shakibaeinia, A., and Bouaanani, N.** Polytechnique Montréal – *Numerical modeling of the interaction between river flow, ice floes, and structures using a fully Lagrangian approach.*
- **Mahrous, A., Galal, K., Bouaanani, N., and Léger, P.** Concordia University – *Seismic Performance Assessment of Reinforced Masonry Core Walls with Boundary Elements*.

## 14 h 45 – 15 h 15 : Coffee break, posters session and voting period (Galerie Rolland)

Coffee break, exhibition of posters by CEISCE members and voting period for best presentations and posters.

## 15 h 15 – 16 h 15 : Presentations by CEISCE members (Amphithéâtre Bernard-Lamarre)

- **Li, L., Aleseyedan, M., Paquet, J., and Boissonnade, N.** Université Laval – *O.I.C.-design of steel sections in case of fire.*
- **Inamasu, H., Lignos, D., and Tremblay, R.** Polytechnique Montréal – *Development of dissipative steel column-base connections for steel moment-resisting frames under seismic loading.*
- **Segura, R.L., Fréchette, V., Miquel, B. and Paultre, P.** Université Sherbooke – *Évaluation probabiliste de la stabilité de la fondation rocheuse en utilisant des modèles de substitution.*

## 16 h 15 – 16 h 45 : Awards and closing ceremony (Amphithéâtre Bernard-Lamarre)

Awards for best presentations and posters, and closing remarks by Prof. Najib Bouaanani, Director of CEISCE.

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## List of posters by CEISCE members (Hall in front of Galerie Rolland)

- **Aftabiazar, M., and Paultre, P.** Université de Sherbrooke – *Inelastic Higher-Mode effects in Reinforced Concrete Wall Structures Subjected to Long-Duration Subduction Ground Motions.*
- **Al-Ahdal, A., AbdelRahman, B., and Galal, K.** Concordia University – *Experimental Behavior and Numerical Stress-Strain Models for Ungrouted and Grouted Masonry Assemblages.*
- **Aldoum, M., and Stathopoulos, T.** Concordia University – *Wind loads on Irregularly-shaped buildings.*
- **Amiri, S., and Koboevic, S.** Polytechnique Montréal – *Inelastic spectra under mainshock-multiple aftershocks sequence.*
- **Boissonnade, N., and Aleseyedan, M.** Université Laval – *Resistance of steel hollow sections in fire using the Overall Interaction Concept.*
- **Bou Aram, A., and Rogers, C.** McGill University – *Bolt force distribution in connections of Type CC CBF structures.*
- **Bouffard, F., and Proulx, J.** Université de Sherbrooke – *Étude du comportement sismique d'un cadre en bois massif à l'échelle réelle soumis à un essai de charge cyclique.*
- **Calixte, C., and Paultre, P.** Université de Sherbrooke – *Studies of the seismic behavior of high-performance concrete and steel bridge piers.*
- **Chen, L., Tirca, L.** Concordia University – *Hybrid braced frame with asymmetric split-X braces.*
- **Dakour, M., Tirca, L., and Stathopoulos, T.** Concordia University – *The effect of wind and earthquake on steel buildings when both actions are critical.*
- **De Almeida Torres Filho, R., Segura, R. L., and Paultre, P.** Université de Sherbrooke – *Machine learning based equations for sliding displacement prediction of gravity dams under seismic load.*
- **Dhar, A., and Tirca, L.** Concordia University – *Seismic response of LINK-Column Frame Building with multiple links.*
- **Diop, P.M., Bazarchi, E., and Lamarche, C.P.** Université de Sherbrooke – *Degree of sophistication required for the dynamic modeling of a steel-aluminium hybrid bridge with extruded aluminium deck.*
- **Dufort, S., Bichai, F., and Yniesta, S.** Polytechnique Montréal – *Conséquences d'un séisme sur un réseau de distribution d'eau potable.*
- **Efio-Akolly, C. A., and Annan, C.-D.** Université Laval – *Seismic Vulnerability of Aluminium and Steel Lattice Domes.*
- **Elmeligy, O., AbdelRahman, B., and Galal, K.** Concordia University – *Assessment of CSA S304 and TMS Code limits for flexural dominated partially grouted reinforced masonry shear walls.*
- **Faraji, K., and Tremblay, R.** Polytechnique Montréal – *Future trends in sustainable earthquake resilient structures with a view to rocking truss moment frame with friction devices.*
- **Fatolazadeh, F., and Goïta, K.** Université de Sherbrooke – *Determination of earthquake epicentres based upon invariant quantities of GRACE strain gravity tensors.*
- **Ferradou, L., Renaud, S., and Bouaanani, N.** Polytechnique Montréal – *Comparaison pratique de méthodes numériques pour modéliser un contact non-linéaire le long d'interfaces de béton et de géomatériaux.*
- **Fortin, T., Dey, P., Boissonade, N., and Fafard, M.** Université Laval – *Analyse structurale du pont d'aluminium d'Arvida.*
- **Hamdi, M., and Goïta, K.** Université de Sherbrooke – *Groundwater storage estimation for complex aquifers using coupled hydrological modeling and GRACE data: the Saskatchewan river basin case study.*
- **Kafidi, A., and Bouaanani, N.** Polytechnique Montréal – *Effets de la bidirectionnalité des accélérations sismiques sur la réponse de site.*
- **Kamal-Alaoui, C., and Koboevic, S.** Polytechnique Montréal – *Amélioration des pratiques de construction dans les pays en développement.*
- **Kouhdasti, R., and Bouaanani, N.** Polytechnique Montréal – *Response spectrum analysis of water-structure systems using modified ground acceleration spectra.*
- **Li, L., Paquet, J., and Boissonnade, N.** Université Laval – *Local stability of steel I-sections in case of fire.*
- **Mahamat Ali Ahmat, A., Langlois, S., Labossière, P., and Loignon, A.** Université de Sherbrooke – *Évaluation du champ de déformations dans une plaque de gousset de pylône à treillis en acier.*
- **Mazloom, S., and Assi, R.** École de Technologie Supérieure – *Estimation of the Vertical Peak Floor Acceleration Demands in Linear Elastic RC Moment-Resisting Frame Buildings.*
- **Milad K. H., Davaran, A., Lamarche, C.P., and Tremblay, R.** Université de Sherbrooke – *Experimental Investigation of the Diaphragm Behavior of a New Deep Steel Deck Profile with Flange and Web Stiffeners.*
- **Mohebbi, S., and Lamarche, C.P.** Université de Sherbrooke – *Non structural damages to modular constructions during transportation.*

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- **Niasse, A., and Léger, P.** Polytechnique Montréal – *Stabilité sismique des piliers d'évacuateurs de crues: une approche d'évaluation progressive.*
- **Panjehbashi Aghdam, P., Parent, S., and Roy, N.** Université de Sherbrooke – *Determination of Mechanical Properties of Stud Connectors in Precast Concrete Hollow Core Slabs.*
- **Pejmanfar, S., and Tirca, L.** Concordia University – *Framework for resilience design of buildings.*
- **Potsis, T., Stathopoulos, T.** Concordia University – *A novel computational approach for an improved expression of the spectral content in the lower atmospheric boundary layer.*
- **Ramadan, A., and Assi, R.** École de Technologie Supérieure – *Assessment of the effect of non-structural walls on the dynamic properties and engineering demand parameters of a case study building.*
- **Reyes Fernandez, A., and Koboevic, S.** Polytechnique Montréal – *Conception parasismique des fondations des contreventements en acier.*
- **Saichi, T., Renaud, S., and Bouaanani, N.** Polytechnique Montréal – *Approche progressive pour tenir compte de la rugosité à grande échelle des interfaces roc-béton dans les analyses pratiques de stabilité de barrage.*
- **Salehian, A., and Paultre, P.** Université de Sherbrooke – *Inelastic Higher-Mode effects in RC Shear Walls with Dual Plastic Hinges.*
- **Sanaz C., Lamarche, C.P., Langlois, S., Desrochers, A., and Talatahari, S.** Université de Sherbrooke – *Design, modelling, and optimization of a new generation of aluminum transmission towers.*
- **Santos, A. B., Segura, R. L., and Paultre, P.** Université de Sherbrooke – *Characterization of the concrete cracking limit state for the seismic analysis of gravity dams.*
- **Trimech, M., Annan, C.-D., and Walbridge S.** Université Laval – *Fatigue Failure of Aluminium Bridge Decks made from Friction-Stir Welded Panels.*
- **Wang, J., and Bouaanani, N.** Polytechnique Montréal – *Modeling of flood wave impact on structures: effects of structural flexibility.*
- **Wang, S., and Tirca, L.** Concordia University – *Braced frame with strongback system for soft-storey mitigation.*
- **Yu, J.H., and Stathopoulos, T.** Concordia University – *Impact of Urban Construction on Pedestrian Level Wind Environment in Complex Urban Building Group.*

## Access - Colloquium - May 9, 2022 - Polytechnique Montréal