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### Research Interest

- Wind/structure and wind/built environment interaction studies through one or a combination of wall of wind, boundary layer wind tunnel experiments and computational approaches
- Codification of wind loads

### Professional Preparation

Concordia University	Building Engineering	Ph.D., 2004
Indian Institute of Technology	Civil Engineering	M.Eng., 1998
Addis Ababa University	Civil Engineering	B.Sc., 1991

### Appointments

2007-Present	Assistant Professor, Department of Civil and Environmental Engineering/ International Hurricane Research Center, Florida International University, Miami, FL
2004-2007	Senior Wind Engineer, RWDI Inc., Guelph, ON, Canada
2004-2004	Part time Professor, Concordia University, Montreal, Canada
2001-2004	Project Engineer, GlobVision Inc., Montreal, Canada
1998-1998	Structural Engineer, Hintsawi Consulting Engineers and Architects, Asmara, Eritrea
1993-1996	Instructor and Chair, Construction Dept., Nazareth Technical College, Nazareth, Ethiopia
1991-1993	Project Engineer, Ethiopian Electric Light and Power Authority, Addis Ababa, Ethiopia

### Publications

#### *Journal papers:*

- Bitsuamlak, G.T., Stathopoulos, T., Bédard, C., "Effect of topography on design wind load: a computational approach", Journal of Computing in Civil Engineering, ASCE, accepted for publication, (letter of Editor dated January 17, 2007).
- Bitsuamlak, G.T., Stathopoulos, T., Bédard, C., "Effect of upstream hills on design wind load: a computational approach", Wind and Structures. Vol. 9, Number 1, pp. 37-58 (2005).
- Bitsuamlak, G.T., Stathopoulos, T., Bédard, C., "Numerical evaluation of turbulent flows over complex terrains: A review", Journal of Aerospace Engineering, Vol. 17, Number 4, pp. 135-145 (2004).

#### *Refereed conference papers:*

- Browne, M., McKinnon, R., Bitsuamlak, G.T., Kumar, S.K. "Geometric scale effects in wind tunnel testing of porous screens", 12th international Conference on Industrial Aerodynamics and Wind Engineering, 2007, Carins, Australia.
- Bitsuamlak, G.T. "Application of computational wind engineering: A practical perspective", Third National Conference in wind Engineering, January 5-7, 2006, Kolkata, India.

- Bitsuamlak, G.T., Stathopoulos, T., Bédard, C., “Numerical evaluation of wind flow over complex Terrain using an object-oriented approach”, 33rd Annual General Conference of the Canadian Society for Civil Engineering – 2005, Toronto, Canada.
- Garabedian, A., Dagneu, M., Bitsuamlak, G.T., Bandari, N., Veillette, S., Fung, K.B., Fedosejevs, G., Latifovic, R., Park, W., Teillet, P.M. “Artificial Intelligence Analysis and Comparison of Integrated Remote and In-Situ Sensing Measurements of Air Temperature”, 25th Canadian Remote Sensing Symposium, October 14-17, 2003, Montreal, Canada.
- Bitsuamlak, G.T., Stathopoulos, T., Bédard, C., “Numerical evaluation of wind flow over different types of topography”, ASCE Structures Congress – 2004, Nashville
- Bitsuamlak, G.T., Stathopoulos, T., Bédard, C., “Numerical evaluation and neural net predictions of wind loads on buildings with upstream complex terrain”, 11th international Conference on Industrial Aerodynamics and Wind Engineering, June 2003, Texas, USA.
- Bitsuamlak, G.T., Stathopoulos, T., Bédard, C., “Effects of topography on the design wind loads for buildings: a computational approach”, XXXIth World Congress, International Association for Housing Science, June 2003, Montreal, Canada.
- Bitsuamlak, G.T., Stathopoulos, T., Bédard, C., “Neural network predictions of wind flow over complex terrain”, 4th Structural Specialty Conference of the CSCE, Montréal, Québec, Canada (2002).
- Bitsuamlak, G.T., Stathopoulos, T., Bédard, C., “Numerical simulation of wind flow over mountain-valley system”, ASCE conference at Washington DC (2001).
- Bitsuamlak, G.T., Stathopoulos, T., Bédard, C., “Progress on numerical simulation of wind loads on buildings”, 8th annual conference of the CFD society of Canada (CFD2K), Montreal (2000).
- Bitsuamlak, G.T., Godbole, P.N., “Application of cascade correlation neural network for determination of wind pressure distribution in buildings”, 10th International Conference on Industrial Aerodynamics and Wind Engineering, 1491-1497, Denmark (1999).

### **Sample Technical Reports:**

#### *Aeroelastic Study:*

- Aeroelastic Model Study Wind-induced Structural Responses, FREEDOM TOWER, New York, New York, 2006.
- Aeroelastic Model Study Wind-induced Structural Responses, MOSCOW CITY SITE 14 TOWER, Moscow, Russia, 2006.

#### *Large Roof Study:*

- Structural Wind Load Study, ORLANDO AIRPORT TERMINAL 2, Orlando, Florida, 2006.
- Cladding/Structural Wind Load Study, YANKEES STADIUM, New York, New York, May 11, 2006

#### *Rigid Model Cladding and Structural Study (Tall buildings):*

- Wind-induced Structural Responses, VILLA MAGNA - SOUTH AND NORTH TOWERS - Miami, Florida, 2006.

- Cladding Wind Load Study, NEO WIND AT RIVER FRONT, Miami, Florida, Project # 051075, May 6, 2005.

*Miscellaneous:*

- Artificial intelligence system for detection of spacecraft anomalies from satellite telemetry data points. Canadian Space Agency, Contract No: 9F028-2-4309, 31st March 2003.
- Natural hazards response using data mining techniques in geospatial standards based environment, Natural Resources Canada, Contract Serial: NRCan-01-0867, File No: 23413-01-C6090, February 2002.

### **Synergistic Activities**

- Performed Aeroelastic Model study for socially and historically significant tall building projects such as Freedom Tower in New York and Burj Dubai (the tallest building in the world) in Dubai.
- Executed close to 100 wind induced responses and wind load studies using RWDI boundary layer wind tunnel, for major projects around the world including tall buildings, airports, sport facilities, industrial buildings, spires and other wind sensitive structures.
- Presented an invited key note lecture on “Application of computational wind engineering: A practical perspective” in Kolkata, India during the Third National Conference in wind Engineering, January 5-7, 2006.
- Received (1) Concordia University Fellowship award in 2001 while pursuing PhD. Studies; (2) full scholarship award from the government of Ethiopia for graduate study at Indian Institute of Technology, Roorkee, India; and (3) Ethiopian Electric Light and Power Authority (EELPA) undergraduate fellowship award to study at Addis Ababa University.

### **Collaborators and Co-Editors**

Gan Chowdhury (Florida International University (FIU)), Emil Simiu (FIU), Amir Mirmiran (FIU), Ted Stathopoulos (Concordia University), Claude Bedard (ETS), Craig Tillman (WeatherPredict), Jason Lin (WeatherPredict), Stephen P. Leatherman (FIU), Patrick Saathoof (RWDI Inc.), Suresh Kumar (RWDI Inc.), Kai Wang (RWDI Inc.).