Appendix A

% Calculation of Across wind ESWL %

```
H=300;
h=[0,12.5/300,25/300,37.5/300,50/300,62.5/300,75/300,87.5/300,100/300,112.5/300,125/300,137.5/300,150/300,162.5/300,175/300,187.5/300,200/300,212.5/300,225/300,237.5/300,250/300,262.5/300,275/300,287.5/300,1];
B=(300/6);
D=(300/6);
f1=0.20;
beta=1;
zetas=.01;
rohs=200;
mz=(B*D*rohs);
syms k real
Mi=int((mz/(H^2))*k^2,k,[0 H]);
alpha=0.3;
Ih=0.11;
Uh=70;
Us=Uh/(f1*B);
wh=2996;
alphadb=D/B;
alphaw=4.2-4*exp(3.7-60*Ih);
Cmbo=0.182-0.019*(alphadb^-2.54)+0.054*(alphaw^-0.91);
gr=sqrt(2*log(600*f1))+(0.5772/sqrt(2*log(600*f1)));
phi=1;
alphahr=H/(sqrt(B*D));
fp=(10^-5)*(191-9.48*alphaw+1.28*alphahr+alphahr*alphaw)*(68-21*alphadb+3*alphadb*alphadb);
Sp=(0.1*(alphaw^-0.4)-0.0004*exp(alphaw))*(0.84*alphahr-2.12-0.05*alphahr*alphahr)*(0.422+(alphadb^-1)-0.08*(alphadb^-2));
neta=(1+0.00473*exp(1.7*alphaw))*(0.065+exp(1.26-0.63*alphahr))*(exp(1.7-(3.44/alphadb)));
lambda=(-0.8+0.06*alphaw+0.0007*exp(alphaw))*((-alphahr^0.34)+0.00006*exp(alphahr))*(0.414*alphadb+1.67*(alphadb^-1.23));
n=f1*B/Uh;
Sm=(Sp*neta*((n/fp)^lambda))/((1-(n/fp)^2)^2+(neta*(n/fp)^2));
zetaa=(0.0025*(1-(Us/9.8)^2)*(Us/9.8)+0.000125*(Us/9.8)^2)/((1-(Us/9.8)^2)^2+0.0291*(Us/9.8)^2);
gb=3.5;
ptotal=zeros(1,25);
atotal=zeros(1,25);
for i=1:25
Gbz=((0.65+1.3*h(1,i)+7*(h(1,i))^2-7.5*(h(1,i))^3)*gb*Cmbo);
%Gbz=((0.65+1.3*h+7*h^2-7.5*h^3)*gb*Cmbo);
Grz=(H*mz/Mi)*((h(1,i))^beta)*gr*(sqrt(pi*phi*Sm/(4*(zetas+zetaa))));
%Grz=(H*mz/Mi)*h*gr*(sqrt(pi*phi*Sm/(4*(zetas+zetaa))));
pz=wh*B*(sqrt(Gbz^2+Grz^2));
az=(H/Mi)*((h(1,i))^beta)*gr*B*wh*(sqrt(pi*phi*Sm/(4*(zetas+zetaa))));
ptotal(1,i)=pz/1000;
atotal(1,i)=az;
end
```

List of Publications

1. **Singh, A.,** & Mandal, S. "Effect Of Plan And Height Aspect Ratios On Along Wind And Across Wind Loads On Super High Rise Buildings", *Jordan Journal of Civil Engineering*, 16(2), 335-354, 2022.

2. **Singh A,** Mandal S. "Effect of wind and structural parameters on across wind load of super high-rise buildings", *Research in Engineering Structures and Materials*, 9(4): 1459-1475, 2023. http://dx.doi.org/10.17515/resm2023.727st0403.

3. **Singh, A.,** Gaikwad, P., Mandal, S. "Shear Lag Effect in Framed-Tube Buildings Due to Torsional Wind Load", *Proceedings of the 9th National Conference on Wind Engineering. NCWE 2023. Lecture Notes in Mechanical Engineering. Springer*, Singapore, 2024. https://doi.org/10.1007/978-981-99-4183-4_1.

4. **Singh, A.,** Mandal, S., Gaikwad, P. "Effect of wind loading pattern on shear lag phenomenon in framed-Tube Building", *Journal of Rehabilitation in Civil Engineering*, 12(1), 2024. https://doi.org/10.22075/jrce.2023.28689.1729.

5. **Singh, A.,** Mandal, S., Effect of various corner modification strategies on across and along wind load for a high-rise building using CFD. [Communicated]

6. **Singh, A.,** Kontoni,D. P., Mandal, S., "Wind-induced torsional loads and responses of tall buildings" [Accepted in *Research in Engineering Structures and Materials*]

References

Akyürek, O., Suksawang, N., & Go, T. H., "Vibration control for torsionally irregular buildings by integrated control system", *Engineering Structures*, 201, 109775, 2019.

ASCE Standard, ASCE7-95, "Minimum Design Loads for Buildings and Other Structures" , American Society of Civil Engineers, New York, USA, 1995.

American Society of Civil Engineers. ASCE/SEI 7-10. "Minimum design loads for buildings and other structures. Reston (VA): ASCE", USA, 2010.

American Society of Civil Engineers. ASCE/SEI 7-16. "Minimum design loads and associated criteria for buildings and other structures", American Society of Civil Engineers, USA, 2016.

American Society of Civil Engineers. ASCE/SEI 7-22."Minimum design loads for buildings and other structures. American Society of Civil Engineers (ASCE): Reston VA. USA, 2022.

Architectural Institute of Korea. Korean Building Code (KBC), Structural 2009; Ministry of Construction and Transportation of Korea: Seoul, Korea, 2009.

AIJ Recommendations for Loads on Buildings, Architectural Institute of Japan, Japan, 1996.

Architecture Institute of Japan (AIJ).: Recommendations for loads on buildings. Architectural Institute of Japan. Tokyo. Japan, 2004 (In Japanese).

Australia/New Zealand (AS/NZS). Australian/New Zealand Standards, Structural Design Actions—Part 2, Wind Actions. AS/NZS 1170.2:2011; Standards Australia: Sydney, Australia, 2011.

Bairagi, A. K., & Dalui, S. K. “Comparison of aerodynamic coefficients of setback tall buildings due to wind load”, *Asian Journal of Civil Engineering*, 19, 205-221, 2018.

Bairagi, A. K., & Dalui, S. K. “Estimation of wind load on stepped tall building using CFD simulation”, *Iranian Journal of Science and Technology*, Transactions of Civil Engineering, 45(2), 707-727, 2021.

Beneke, D. L., & Kwok, K. C. S., “Aerodynamic effect of wind induced torsion on tall buildings”, *Journal of Wind Engineering and Industrial Aerodynamics*, , 50, 271-280,1993.

Boggs, D. W., Hosoya, N., & Cochran, L., “Sources of torsional wind loading on tall buildings: Lessons from the wind tunnel”, *In Advanced Technology in Structural Engineering*, pp. 1-8, 2000.

Boggs, D., and Dragovich, J. “The Nature of Wind Loads and Dynamic Response.”, *Special Publication*, 240, 15-44, 2006.

British Standard, Loadings for Buildings - Part 2: Code of Practice for Wind Loads, Building and Civil Engineering Sector Board, United Kingdom, 1995.

BS 6399-2 (1997) British standard: loading for buildings part 2.Code of practice for wind loads, British Standard Institution, London, 1997.

Chen, X., and Kareem, A. “Dynamic wind effects on buildings with 3D coupled modes: Application of high frequency force balance measurements.” *Journal of Engineering Mechanics*, 131(11), 1115-1125, 2005.

Cheng C.M., Lu P.C., Chen R.H. “Wind loads on square cylinder in homogeneous turbulent flows”, *Journal of Wind Engineering and Industrial Aerodynamics*, 41(1-3):739-49, 1992.

Cheng, C.-M., Lu, P.-C., and Tsai, M.-S."Across wind Aerodynamic Damping of An Isolated Square shaped Building." *The Fifth Asia-Pacific Conference on Wind Engineering*, Kyoto, V(89), 1743–1756, 2001.

Cheung, J. C. K., & Melbourne, W. H., "Torsional moments of tall buildings", *Journal of Wind Engineering and Industrial Aerodynamics*, 42(1-3), 1125-1126,1992.

China National Standard: GBJ9 Load Code for Building Structures, China, 1987.

Coull, A. and Bose, B. "Simplified analysis of frame-tube structures", *Journal of the Structural Division*, 101(11), pp.2223-2240, 1975.

Davenport, A.G., "A Statistical Approach to the Treatment of Wind Loading on Tall Masts and Suspension Bridges", Ph.D. Thesis, Department of Civil Engineering, University of Bristol, United Kingdom. March, 1961.

Davenport, A. G. "The dependence of wind loads on meteorological parameters." *In Proceedings of the international research seminar on wind effects on buildings and structures*, vol. 1, pp. 19-82. University of Toronto Press, 1967.

Davenport, A. G. "The response of six building shapes to turbulent wind." *Philosophical Transactions of the Royal Society of London*. Series A, Mathematical and Physical Sciences 269.1199: 385-394, 1971.

Davenport, A.G. "Gust loading factors", *Journal of Structural Division*, ASCE, Vol. 93, No. 3, pp. 11–34, 1967.

Davenport, A.G., "The relationship of wind structure to wind loading", *In: Proceedings of the Conference on Wind Effects on Structures*, National Physical Laboratory (NPL United Kingdom), (ICWE-1), HMSO, p. 53, 1965a

Davenport, A.G., "The buffeting of structures by gusts", *In: Proceedings of the Conference on Wind Effects on Structures*, National Physical Laboratory (NPL United Kingdom), (ICWE-1), HMSO, p. 357, 1965b.

Dutton, R., Isyumov, N. "Reduction of tall building motion by aerodynamic treatments", *Journal of Wind Engineering and Industrial Aerodynamics*, 36, Part 2, 739-747, 1990.

European Prestandard, Ratified European Text, Eurocode 1: Basis of Design and actions on structures Part 2-4: Actions on Structures - Wind Actions, European Committee for Standardization, Belgium, 1995.

European Committee for Standardization (C.E.N.). Eurocode 1: Actions on Structures—Part 1–4: General Actions—Wind Actions; pr EN 1991-1-4.6; European Committee for Standardization (C.E.N.): Brussels. Belgium. 2004.

Foutch, D. A., & Safak, E., "Torsional vibration of wind-excited structures", *In Engineering Mechanics*, ASCE, pp. 255-258, 1979.

Franke, J., Hellsten, A., Schlünzen, K. H., & Carissimo "Best practice guideline for the CFD simulation of flows in the urban environment-a summary", *In 11th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, Cambridge, UK, July 2007.

GB 50009-2012 ,Ministry of Housing and Urban-Rural Development of the People's Republic of China. GB 50009-2012 Load Code for the Design of Building Structures. 2012.

Gu, M., and Quan, Y. "Across-wind loads of typical tall buildings." *Journal of Wind Engineering and Industrial Aerodynamics*, 92(13), 1147-1165, 2004.

Gu, M., and Yong Q.. “Across-wind loads and effects of super-tall buildings and structures.” *Science China Technological Sciences,* 54: 2531-2541, 2011

Gu, M., Su, L., Quan, Y., Huang, J., and Fu, G. “Experimental study on wind-induced vibration and aerodynamic mitigation measures of a building over 800 meters”, *Journal of Building Engineering*, 46, 103681, 2022.

Ha T., Shin S.H., Kim H. “Damping and natural period evaluation of tall RC buildings using full-scale data in Korea”, *Applied Sciences*, 10(5), 1-16, 2020.

Haggkvist, K., Svensson, U., Taesler, R. “Numerical simulations of pressure fields around buildings”, *Buildings and Environment*, 24 (1), 65-72, 1989.

Holmes, J.D. , Wind Loading of Structures, New York, USA, 2001.

Hou, F., & Jafari, M., “Investigation approaches to quantify wind-induced load and response of tall buildings: A review”, *Sustainable Cities and Society*, 62, 102376, 2020.

Hui, Y., Tamura, Y. and Yang, Q., “Analysis of interference effects on torsional moment between two high-rise buildings based on pressure and flow field measurement”, *Journal of Wind Engineering and Industrial Aerodynamics*, 164, 54-68, 2017.

Irwin, P. A., and Brian Breukelman. “Recent applications of damping systems for wind response.” *Proceedings of the sixth world congress of the council on tall buildings and urban habitat*, Melbourne, Australia, 2001.

Irwin, P. A., Kilpatrick, J., Frisque, A., Friend or Foe, “Wind at Height”, *CTBUH 8th World Congress*, Dubai, Dubai, 2008.

IS:875 (Part 3). “Code of Practice for Design Loads (Other Than Earthquake) for building and structures - Part 3 : Wind Loads.” New Delhi, India, 2015.

ISO 4354 (E), Second Edition: Wind Actions on Structures; International Organization for Standardization: Geneva, Switzerland, 2009.

Isyumov, N. “Alan G. Davenport's mark on wind engineering”, *Journal of Wind Engineering and Industrial Aerodynamics* ,104: 12-24, 2012.

Isyumov, N., Fediw, A.A., Colaco, J., Banavalkar, P.V. “Performance of a tall building under wind action”, *Journal of Wind Engineering and Industrial Aerodynamics*, 42, 1053-1064, 1992.

Jones, W.P., Launder, B. E. “ The prediction of laminarization with a two- equation model of turbulence”, *International journal of heat and mass transfer*, 15, 301-314, 1972.

Kareem, A. “Dynamic response of high-rise buildings to stochastic wind loads.”, *Journal of Wind Engineering and Industrial Aerodynamics*, Vol. 42.1-3, pp. 1101-1112, 1992.

Kareem, A. “Mitigation of wind induced motion of tall buildings.”, *Journal of Wind Engineering and Industrial Aerodynamics*, 11(1-3), 273-284, 1983.

Kareem, A., Cermak J.E., Peterka, J.A. “Cross-wind response of high-rise building”, *Proceedings of 5th International Conference on Wind Engineering*, Vol. 2, Pergamon Press, Oxford, pp. 659-672, 1979.

Kareem, A., Kijewski, T., & Tamura, Y. “Mitigation of motions of tall buildings with specific examples of recent applications.”, *Wind and structures*, 2(3), 201-251, 1999.

Katagiri, J., Marukawa, H., Fujii, K., Nakamura, O. and Katsumura, A. “Evaluation of wind responses of a building gained from wind tunnel tests”, *Proceedings of the 9th International Conference on Wind Engineering,* New Delhi, India, pp. 1408–1419, 1995.

Kawai, H.“Effect of corner modifications on aeroelastic instabilities of tall buildings”, *Journal of wind engineering and industrial aerodynamics*, 74, pp.719-729, 1998.

Kelly, D., Poon, D., Irwin, P., Xie, J. “Wind Engineering of the Shanghai Centre Tower”, *Advances in Hurricane Engineering*, American Society of Civil Engineers, pp. 426-436, 2012.

Khan F. R., Amin N. R. “Analysis and design of framed tube structures for tall concrete buildings”, *Special Publication*, 36, 39–60, 1972.

Kijewski, T., and Kareem, A. ‘‘Dynamic wind effects: A comparative study of provisions in codes and standards with wind tunnel data.’’, *Wind and Structures*,1(1), 77–109, 1998.

Kim, Y. C., Tamura, Y., Tanaka, H., Ohtake, K., Bandi, E. K., & Yoshida, A., “Wind-induced responses of super-tall buildings with various atypical building shapes”, *Journal of Wind Engineering and Industrial Aerodynamics*, 133, 191-199, 2014.

Kim, Y.-M., You, K.-P. “Dynamic responses of a tapered tall building to wind loads”, *Journal of Wind Engineering and Industrial Aerodynamics* , 90, 1771-1782, 2002.

Kim, Y.-M., You, K.-P., Ko, N.-H. “Across-wind responses of an aeroelastic tapered tall building”, *Journal of Wind Engineering and Industrial Aerodynamics* ,96, 1307-1319, 2008.

Kumari S., Singh A., Mandal S. “Effect of terrain category, aspect ratio and number of storeys on the shear lag phenomenon in RCC framed tube structures”, *International Conference on Advances in Structural Mechanics and Applications*, Springer, 2022.

Kwok, K.C.S. “Aerodynamics of tall buildings”, *In Proceedings of the Ninth International Conference on Wind Engineering*, 180-205, 1995.

Kwok, K. C. S. “Cross-wind Response of Structures Due to Displacement Dependent Excitations” (Doctoral dissertation, Monash University).1977.

Kwok, K. C. S. “Cross-wind response of tall buildings.”, *Engineering Structures* , no. 4 256-262, 1982.

Kwok, K. C. S., Hitchcock, P. A., & Burton, M. D., “Perception of vibration and occupant comfort in wind-excited tall buildings”. *Journal of Wind Engineering and Industrial Aerodynamics*, 97(7-8), 368-380, 2009.

Lagomarsino S. “Forecast models for damping and vibration periods of buildings”, *Journal of Wind Engineering and Industrial Aerodynamics*, 48(2-3), 221-39, 1993.

Leonard J. “Investigation of shear lag effect in high-rise buildings with diagrid system” , M. E. Thesis, Massachusetts Institute of Technology, Massachusetts, 2007.

Li, Q. S., Xiao, Y. Q., Fu, J. Y., & Li, Z. N. “Full-scale measurements of wind effects on the Jin Mao building.” *Journal of Wind Engineering and Industrial Aerodynamics*, 95(6), 445-466, 2007.

Li, S. Y., Liu, M., Li, H. X., Hui, Y., and Chen, Z. Q “Effects of structural damping on wind-induced responses of a 243-meter-high solar tower based on a novel elastic test model”, *Journal of Wind Engineering and Industrial Aerodynamics*, 172, 1-11, 2018.

Liang, S., Liu, S., Li, Q. S., Zhang, L., and Gu, M. “Mathematical model of across wind dynamic loads on rectangular tall buildings.” *Journal of Wind Engineering and Industrial Aerodynamics*, 90(12-15), 1757-1770, 2002.

Liu, J., & Niu, J. “CFD simulation of the wind environment around an isolated high-rise building: An evaluation of SRANS, LES and DES models”, *Building and Environment*, 96, 91-106, 2016.

Mahjoub R., Rahgozar R., Saffari H. “Simple method for analysis of tube frame by consideration of negative shear lag”, *Australian Journal of Basic and Applied Sciences*, 5.3, 309-316, 2011.

Marukawa, H., Ohkuma, T., and Momomura, Y. “Across-wind and torsional acceleration of prismatic high rise buildings.” *Journal of Wind Engineering and Industrial Aerodynamics*, 42(1-3), 1139-1150, 1992.

Melbourne, W. H. “Crosswind response of structures to wind action.” *Proceedings 4th international conference on wind effects on buildings and structures*, Heathrow, 1977.

Mendis, P., Tuan N., Haritos N., Anil H., Bijan S., and Cheung J., “Wind loading on tall buildings.”, *Electronic Journal of Structural Engineering*, 2007.

Meng Y., and Hibi K. “Turbulent measurements of the flow field around a high-rise building”, *Wind Engineers*, JAWE, 76, 55-64, 1998.

Miyashita, K., Katagiri, J., Nakamura, O., Ohkuma, T., Tamura, Y., Itoh, M., Mimachi, T. “Wind-induced response of high-rise buildings Effects of corner cuts or openings in square buildings”, *Journal of Wind Engineering and Industrial Aerodynamics*, 50, 319-328, 1993.

Moghadasi M., Taeepoor S., Rahimian K., Petrů M. “The effect of lateral load type on shear lag of concrete tubular structures with different plan geometries”, *Crystals*, 10(10), 897, 2020.

National Building Code of Canada (1995), Canadian Commission on Building and Fire Codes, National Research Council, Canada, 1995.

NBC 2005: National building Code of Canada. National Research Council of Canada, Ottawa, Canada, 2005.

NBCC 2020: National building Code of Canada. National Research Council of Canada, Ottawa, Canada. 2020.

Nishimura, H. and Taniike, Y. “Mechanism of the occurrence for fluctuating force on a circular cylinder”, *Proceedings of the Tenth International Conference on Wind Engineering*, Copenhagen, Denmark, pp. 1701–1708, 1999.

Okada, H., Kong, L. “The Effects of Open Passage on Reducing Wind Response of Tall Building”, *In Proceedings of the 29th Technical Report*, Public Works Research institute, 561-566, 1999.

Patrickson, C. P., & Friedmann, P., “A study of the coupled lateral and torsional response of tall buildings to wind loading”, *UCLA School of Engineering and Applied Sciences Rep.*, UCLAENG 76126, 1976.

Pozos-Estrada, A., & Hong, H. P., “Sensitivity analysis of the effectiveness of tuned mass dampers to reduce the wind-induced torsional responses”, *Latin American Journal of Solids and Structures*, 12, 2520-2538, 2015.

Prandtl, L. “Über Flüssigkeitsbewegung bei sehr kleiner Reibung.” Verhandlungen des III. Internationalen, *Mathematiker-Kongresses in Heidelberg*, vom 8. bis 13.. Teubner. August, 1904.

Quan, Y., and A, M. “Across-wind equivalent static wind loads and responses of super-high-rise buildings.” *Advances in Structural Engineering,* 15(12), 2145-2155, 2012.

Quan, Y., Gu, M. and Tamura, Y. “Experimental evaluation of aerodynamic damping of square super high-rise buildings”, *Wind & Structure*, Vol. 8, No. 5, pp. 309–324, 2005.

Quan, Y., Zhang, Z., Gu, M. and Xiong, Y. “Study on RMS values of across-wind aerodynamic base moment coefficients of high-rise buildings with square or rectangular

sections", *China Civil Engineering Journal*, Vol. 44, No. 5, pp. 101–115, 2012 (in Chinese).

Rheinhold, T. A. and Sparks, P. R. "The influence of wind direction on the response of a square-section tall building", *Proc. 5th Int. Conf. Wind Eng*., Vol. 2, Pergamon Press, Oxford, pp. 685-698, 1979.

Richards, P.J. and Hoxey, R.P., "Appropriate boundary conditions for computational wind engineering models using the k-ϵ turbulence model", *Journal of wind engineering and industrial aerodynamics*, 46, pp.145-153, 1993.

Rodi, W. "Turbulence models and their application in hydraulics", *International association for hydraulics research*, June, Delft, The Netherlands, 1980.

Ross, A. S., El Damatty, A. A., & El Ansary, A. M., "Application of tuned liquid dampers in controlling the torsional vibration of high-rise buildings", *Wind and Structures*, 21(5), 537-564, 2015.

Saunders, J. W. "Wind excitation of tall buildings with particular reference to the cross-wind motion of tall buildings of constant rectangular cross-section", PhD thesis, Monash University, Australia, 1974.

Saunders, J. W. and Melbourne, W. H. "Tall rectangular building response to cross-wind excitation", *Proc. 4th lnt. Conf. Wind Effects Buildings Struct.*, Cambridge University Press, pp. 369-379, 1975.

Simiu, E., and Scanlan, R. H., Wind Effects On Structures: fundamentals and applications to design, *3rd Ed.,* John Wiley & Sons, New York, USA, 1996.

Singh G. J., Mandal S., & Kumar R. "Investigation on shear lag phenomenon in RCC Framed Tube Structures." *i-Manager's Journal on Structural Engineering*, 4(3), 18, 2015.

Solari, G. ‘‘Gust buffeting. I: Peak wind velocity and equivalent pressure.’’ *Journal of Structural Engineering*, 119(2), 365–382, 1993a.

Solari, G.. ‘‘Gust buffeting. II: Dynamic along-wind response.’’ *Journal of Structural Engineering.*, 119 (2), 383–397, 1993b.

Surry, D., & Lythe, G., “Mean torsional loads on tall buildings”, *In 4th US National Conference on Wind Engineering Research*, Univ. of Washington, Seattle, Washington, 1981.

Tallin, A. and Ellingwood, B., “Serviceability limit states: wind induced vibrations”, *Journal of Structural Engineering*, ASCE, 110(10), 2424-2437, 1984.

Tamura Y. “Damping in buildings for wind resistant design”, *International Symposium on Wind and Structures for the 21st Century,* Cheju, Korea, 115-130, 2000.

Tamura, Y., Xu, X., Tanaka, H., Ohtake, K., Kim, Y. C., Yoshida, A., & Yang, Q., “Effects of configurations of super-tall buildings on aerodynamic and wind-environmental characteristics”, *The 2018 World Congress on Advances in Civil, Environmental, & Materials Research (ACEM18)*, Songdo Convensia, Incheon, Korea, 2018.

Tang, Y., “Research on Three Dimensional Wind-Induced Vibration and Static-Equivalent Wind Load of High-Rise Building”, Ph.D. Thesis, Tongji University, Shanghai, China, 2006 (in Chinese).

The Council on tall buildings and urban Habitat (CTBUH), CTBUH year in review, *Tall Trends of 2019*, 2020.

Tse, K. T., Kwok, K. C., & Tamura, Y., "Performance and cost evaluation of a smart tuned mass damper for suppressing wind-induced lateral-torsional motion of tall structures", *Journal of Structural Engineering*, 138(4), 514-525, 2012.

United Nations Department of Economic and Social Affairs, Population Division (2018). *World Urbanization Prospects: The 2018 Revision,* United Nations Department of Economic and Social Affairs: New York, NY. USA 799, 2018.

Vellozzi, J., and Cohen, E. ''Gust response factors.'' *Journal of Structural Division* , ASCE, 94(6), 1295–1313, 1968.

Venanzi, I., & Materazzi, A. L. "Across wind aeroelastic response of square tall buildings: a semi-analytical approach based of wind tunnel tests on rigid models." *Wind & Structures*, 15(6), 495-508, 2012.

Vickery, B. J. ''On the reliability of gust loading factors.'' Proc., Technical Meeting Concerning Wind Loads on Buildings and Structures, *Building Science Series 30*, National Bureau of Standards, Washington, D.C., 296–312, 1970.

Von Kármán, T.. Progress in the statistical theory of turbulence. *Proceedings of the National Academy of Sciences*, 35(1), 1-10, 1949.

Wang M, Nagarajaiah S, Sun FF. "A novel crosswind mitigation strategy for tall buildings using negative stiffness damped outrigger systems", *Structural Control and Health Monitoring*, 29(9): 2988, 2022.

Xu, Y. L., Kwok, K. C. S., & Samali, B., "Torsion response and vibration suppression of wind-excited buildings", *Journal of Wind Engineering and Industrial Aerodynamics*, 43(1-3), 1997-2008, 1992.

Yeh, H. and Wakahara, T. "Wind-induced forces on a slender rectangular-column structure", *Proceedings of 2nd European & African Conference on Wind Engineering*, Genova, Italy, 845–952, 1997.

Zhang, Z. W., and To, A. P. "Comparative study of along-wind and across-wind loads on tall buildings with different codes." *Proceedings of 14th international Symposium on Structural Engineering*, Beijing, China, September 12th-15th, 723-728, 2016.

Zhaoa, X., J. M. Ding, and H. H. Suna. "Structural design of shanghai tower for wind loads.", *Procedia Engineering*, (14) ,1759-1767, 2011.

Zhou, Y., Gu, M. and Xiang, H.F.. "Along-wind static equivalent wind loads, I: Unfavourable distributions of static equivalent wind loads", *Journal of Wind Engineering and Industrial Aerodynamics,* Vol. 79, No. 1–2, pp. 135–150, 1999a.

Zhou, Y., Kijewski, T., & Kareem, A. "Along-wind load effects on tall buildings: comparative study of major international codes and standards.", *Journal of Structural Engineering*, 128(6), 788-796, 2002.

Zhou, Yin, Tracy Kijewski, and Ahsan Kareem. "Aerodynamic loads on tall buildings: interactive database." *Journal of structural engineering*, 129, no. 3: 394-404, 2003.

Zou, L., Li, F., Song, J., Shi, T., Liang, S., & Mercan, O., "Investigation of torsional aeroelastic effects on high-rise buildings using forced vibration wind tunnel tests", *Journal of Wind Engineering and Industrial Aerodynamics*, 200, 104158, 2020.

Zou, L., Xu, G., Cai, C. S., & Liang, S., "Wind tunnel tests of 3D wind loads on tall buildings based on torsional motion-induced vibrations", *Wind and Structures*, 23(3), 231-251, 2016.