

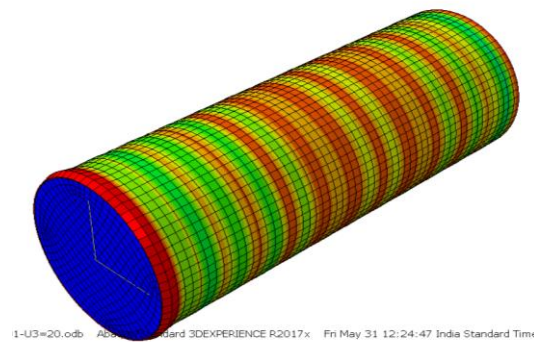
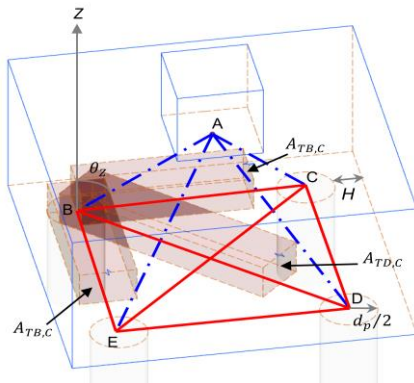


Research Interests

- Reinforced, and prestressed concrete structures
- Steel-concrete composite structures
- Structural evaluation of deteriorating structures
- Non-destructive testing and evaluation

Brief Summary of Research

- Compatibility Strut-and-Tie Method for deteriorated bridge piers and 3D pile caps.
- Finite element method for analysis of concrete infilled steel tube.
- Experimental evaluation of large-scale deteriorated reinforced concrete bridge bents.
- Stress-block parameters for unconfined and confined concrete based on unified stress-strain model.
- Non-destructive evaluation of bridge post-tensioning and stay-cable systems.



Analysis of pile caps using 3D Compatibility
Strut-and-Tie Method

Analysis of Concrete Infilled Steel Tubes using
Finite Element Methods

Projects

- Evaluation of strength and Stability of proposed elephant protection fence for Kerala Forest Department with M.V. Anil Kumar.

Recent Publications

- Terzioglu, T.; Karthik, M.M.; Hurlebaus, S; Hueste, M.B.D (2019). "Nondestructive Evaluation of External Post Tensioning Systems to Detect Grout Defects." *ASCE Journal of Structural Engineering*, 145 (1).
- Dey, S., and Karthik, M.M. (2018). "Simulating Pile Cap Behaviour Using Three-Dimensional Compatibility Strut-and-Tie Method", *11th Structural Engineering Convention*, Jadavpur University, Kolkata, India.
- Karthik, M.M., Mander, J.B., and Hurlebaus, S. (2018). "Experimental Behavior of Large Reinforced Concrete Specimen with Heavy ASR and DEF Deterioration." *ASCE Journal of Structural Engineering*, 144 (8) 04018110-1-10.
- Karthik, M.M., Mander, J.B., and Hurlebaus, S. (2018). "Modeling ASR/DEF Expansion Strains In Large Reinforced Concrete Specimens." *ASCE Journal of Structural Engineering*, 144 (7) 04018085-1-11.