Prof. Dr. **Jose Manuel Cabrero Ballarin (Spain)**
University of Navarra
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COST FP1402, MC Member, WG3 Member

Personal	*Organisation*
Years of experience in relevant field: 7 Expertise: Numerical modelling. Failure criteria for wood. Dowelled connections. Fiber reinforced wood. Architectural design Degree: PhD (26.09.2006)	Department of Building Construction, Services and Structures (www.unav.es/madera; www.unav.es/estructuras) Focus: theoretical and practical research / innovation and education / training Facilities: Testing lab with loadoto carnet cells up to 400 kN, specialized in building components and materials characterisation. Computer Numerical Control (CNC). Laser cutting printer. 3D printer.

No. of staff	PhD students	MSc/year
5	2	0

Research projects

- RETICC - structures durability: REinforcemet of TImber and Concrete Constructions. (2011). http://www.unav.edu/centro/madera/reticc
- esMADERA (isWOOD). efficient and sustainable: Timber Applied to the Design of High Performance Structures (2008-2011). http://www.unav.edu/centro/madera/esmadera
- Timber mechanical connections. (2012-2015) http://www.unav.edu/centro/madera/optimizaciondeunionesmecanicasdemadera
- New applications, treatments and products for beechwood. (2011-2013) http://www.unav.edu/centro/madera/nuevos-mercados-para-la-madera-de-haya
- Characterisation, modelling and automated design of 3D semi-rigid steel joints. (2015-2018). http://www.structuralconnections.es
- Analysis and design of 3D semi-rigid connections in steel and concrete structures (2007-2016)
-METAJOINT2D - A new methodology for the direct and automatic characterization of 2D steel and timber joints based on specialized metamodels built from deformation modes. (2017-2019)

Publications

-Yurrita M., Cabrero J.M. (2018) New criteria for the determination of the parallel-to-grain embedment strength of wood, Construction and Building Materials, 173, pp. 238-250. doi: 10.1016/j.conbuildmat.2018.03.127
-Cabrero J.M., Yurrita M. (2018) Performance assessment of existing models to predict brittle failure modes of steel-to-timber connections loaded parallel-to-grain with dowel-type fasteners. Engineering Structures, 171, pp. 895-910. doi: 10.1016/j.engstruct.2018.03.037
-Stepinac M., Cabrero J.M., Ranasinghe K., Kleiber M.(2018) Proposal for reorganization of the connections chapter of Eurocode 5. Engineering Structures, 170, pp. 135-145. doi: 10.1016/j.engstruct.2018.05.058
-Iraola B., Cabrero J.M. (2016) An algorithm to model wood accounting for different tension and compression elastic and failure behaviors, Engineering Structures, 117, pp. 332-343. doi:10.1016/j.engstruct.2016.03.021
- Cabrero JM, Gebremedhin K (2008) Finite Element Model for Predicting Stiffness of Metal-Plate Connected Tension Splice and Heel Joints of Wood Trusses, Transactions of the ASABE.
- Gil B, Goñi R (2015) T-Stub behaviour under out-of-plane bending. I: Experimental research and finite element modelling. Engineering Structures.
- Gil B, Bijlaard FSK, Bayo E (2015) T-Stub behaviour under out-of-plane bending. II: Parametric Study and analytical characterization. Engineering Structures.
- Gil B, Goñi R, Bayo E (2013) Experimental and numerical validation of a new design for three-dimensional semi-rigid composite joint under general loads
- Cabrero JM, Heiduschke A, Haller P (2010) Analytical assessment of the load carrying capacity of axially loaded wooden reinforced tubes, Composite Structures.
- Blanco C, Cabrero JM, Martin-Meizoso A, Gebremedhin KG (2015) Design oriented failure model for wood accounting for different tensile and compressive behavior. Mechanics of Materials.
- Cabrero JM, Blanco C, Gebremedhin KG, Martín Meizoso A (2012) Assessment of phenomenological failure criteria for wood. European Journal of Wood and Wood Products.
- Cabrero JM, Vargas G (2015) Analysis of the validity of the three-point off-axis bending method. Applied Mathematical Modelling.
- Iraola B, Cabrero JM, Gil B (2015) A three dimensional direction dependent wood model. Wood Science and Technology (under review)
- Bayo E, Gracia J, Gil B, Goñi R (2012) Efficient modelling of semirigid composite connections for frame analysis. Journal of Constructional Steel Research