

Benjamin Richard (PhD candidate - Eng.)

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Date of birth: 02-18-1984

Nationality: French

Marital status: Unmarried,  
without child

## Education

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- 2007 expected september 2010** – **LABORATOIRE CENTRAL DES PONTS ET CHAUSSÉES**, Paris, France  
Ph.D. candidate  
Numerical modeling of the steel/concrete interface including corrosion up to failure: application to reinforced concrete structures subjected to corrosion
- 2007** **NATIONAL INSTITUTE OF APPLIED SCIENCES**, Rennes, France  
M.Sc. in computational mechanics (with honors)
- 2007** **NATIONAL INSTITUTE OF APPLIED SCIENCES**, Rennes, France  
Civil Engineering degree (with honors)
- 2002** **JEAN HENRI FABRE HIGH SCHOOL**, Carpentras, France  
High school, Baccalauréat in maths, physics, Engineering sciences (with honors)

## Professional experiences

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- 2008 – today** (50 hours) **ECOLE NORMALE SUPÉRIEURE DE CACHAN/UNIVERSITÉ PARIS 6**, Cachan/Paris, France  
Teaching (Prestressed concrete, Mathematics)
- 2007** (6 months) **LABORATOIRE CENTRAL DES PONTS ET CHAUSSÉES**, Paris, France  
Support Vector Machine technique applied to coupling finite element/reliability analyses of reinforced concrete structures
- 2006** (3 months) **LABORATOIRE CENTRAL DES PONTS ET CHAUSSÉES**, Paris, France  
Critical review of steel/concrete interface constitutive models including corrosion
- 2005** (3 months) **SUEZ/DEGREMONT-UK**, Dublin, Ireland  
Site manager assistant
- 2002** (1 month) **MCCORMICK/DUCROS-TM**, Carpentras, France  
Optimization of expenses related to consumables

## Languages and computers

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- English: Fluent spoken English (TOEIC paper based 825/990)
- Spanish: Basics
- Programming: Fortran, Esope
- Computational softwares: Cesar-LCPC, Cast3M-CEA, Maple, Scilab, Matlab, Plaxis
- Office softwares: Word, Powerpoint, Excel, L<sup>A</sup>T<sub>E</sub>X

## List of publications

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### Papers in Refereed Journals

- [8] Richard B., Adelaide L., Mohammadkhani-Shali S., Cremona C. (2009) A response surface method based on regressive support vector machines using an adaptive experimental design: application to coupling non linear finite elements reliability analysis of a prestressed reinforced concrete beam. In preparation.
- [7] Richard B., Epailard S., Cremona C., Elfgren L., Cremona C. (2009) Non linear finite element analysis of a 50 year old reinforced concrete trough bridge. Submitted to Engineering Structures.
- [6] Richard B., Cremona C. (2009) Reliability analysis of the mechanical behaviour of a bridge prestressed concrete girder including a Bayesian robust updating of the probabilistic model. Submitted to Reliability Engineering and System Safety.
- [5] Richard B., Ragueneau F., Cremona C., Adelaide L. (2009) Isotropic continuum damage mechanics for concrete under cyclic loading: stiffness recovery, inelastic strains and frictional sliding. Submitted to Engineering Fracture Mechanics.
- [4] Richard B., Ragueneau F., Cremona C., Adelaide L., Tailhan, J.L. (2009) A three-dimensional steel-concrete interface model including corrosion effects. Submitted to Engineering Fracture Mechanics.
- [3] Richard B., Cremona C., Ragueneau F., Adelaide L. (2009) A simplified multifiber approach for assessing the load carrying capacity of reinforced concrete structures subjected to corrosion. Submitted to Engineering Mechanics ASCE.
- [2] Richard B., Ragueneau F., Cremona C., Berthaud Y. (2009) Damage mechanics applied to the modelling of corroded reinforced concrete structures: steel, concrete and interface. Submitted to European Journal of Environmental and Civil Engineering.
- [1] Richard B., Cremona C., Adelaide L. (2009) Structural assessments with Bayesian networks. Submitted to Structural Engineering ASCE.

### Papers in International Conferences

- [8] Richard B., Martin E., Ragueneau F., Cremona C. (2010) 3D failure numerical analysis of reinforced concrete beams subjected to corrosion. Submitted to ECCMIV, Paris, France.
- [7] Richard B., Ragueneau F., Cremona C., Adelaide L. (2010) A multifiber approach to describe the ultimate behaviour of corroded reinforced concrete structures. Submitted to Euro-C, Rohrmoos/Schladming, Austria.
- [6] Epailard S., Richard B., Cremona C. (2009) Non linear finite element analysis of a reinforced concrete bridge up to failure: first results. Submitted to IABSMAS'10, Philadelphia, USA.
- [5] Delaplace A., Richard B., Ragueneau F. (2009) A quantitative numerical analysis of the cracking distribution and openings of a reinforced concrete structure using both finite and discrete elements approaches. Submitted to FRAMCOS'7, Seoul, Korea.
- [4] Jason L., La Borderie C., Giry C., Richard B., Chambart M., Thillard G. (2009) Benchmark on the cracking simulation of reinforced concrete ties. Submitted to FRAMCOS'7, Seoul, Korea.
- [3] Richard B., Ragueneau F., Adelaide L., Cremona C., Tailhan J.L. (2009) Isotropic damage model coupled to frictional sliding to model the cyclic behaviour of reinforced concrete elements. COMPLASX'09 (4 pages), Barcelona, Spain.

- [2] Richard B., Ragueneau F., Adelaide L., Cremona C., Tailhan J.L. (2009) Thermodynamical assessments to model steel concrete interface behaviour including corrosion effects. COMPLASX'09 (4 pages), Barcelona, Spain.
- [1] Cremona C., Mohammadkhani-Shali S., Richard B., Marcotte C., Tonnoire B. (2008) Probabilistic analysis of the structural behaviour of a bridge prestressed concrete beam. IABMAS'08 (8 pages), Seoul, Korea.

**Papers in National Conferences**

- [3] Richard B., Ragueneau F., Adelaide L., Cremona C., Tailhan J.L., Quiertant M., Bouteiller V., Dauthuille J. (2009) Mechanical behaviour of a corroded steel/concrete interface (in French). CFM'09 (6 pages), Marseille, France.
- [2] Adelaide L., Richard B., Ragueneau F., Cremona C., Tailhan J.L. (2009) A constitutive law coupling elasticity, damage and internal sliding for quasi brittle materials: application to concrete (in French). CFM'09 (6 pages), Marseille, France.
- [1] Richard B., Ragueneau F., Adelaide L., Cremona C., Tailhan J.L. (2009) A contribution to the numerical modeling of existing structures (in French). GC'09 (8 pages), Cachan, France.

**Papers in Non-refereed Journals, Conferences, Workshops, ...**

- [1] Richard B., Adelaide L., Ragueneau F., Cremona C. (2009) A steel/concrete interface constitutive model including the main corrosion effects. International PhD Student Workshop 2009 (8 pages), Guimarez, Portugal.