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Universität Konstanz  
Fachbereich Mathematik und Statistik

**Arbeitsgruppe  
Numerik**

**Prof. Dr. Stefan Volkwein**  
Stefan.Volkwein@uni-konstanz.de

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22. Januar 2015

Im Oberseminar

## **Numerik**

wird am

**Dienstag, dem 3. Februar 2015**

**folgender Vortrag gehalten:**

**Herr Ph.D. Paolo Pacciarini**

**Laboratory for Modeling and Scientific Computing MOX,  
Politecnico di Milano, Milan, Italy**

### **A discontinuous Galerkin Reduced Basis Element method**

**Zeit: 13:30 Uhr**

**Raum: G 308**

Interessenten sind herzlich willkommen!

gez. Stefan Volkwein

#### **Abstract:**

We propose a new discontinuous reduced basis element method for the approximation of parametrized PDEs in partitioned domains. The method is built upon an offline stage (parameter independent) and an online (parameter dependent) one. In the offline stage we build a non-conforming (discontinuous) global reduced space as a direct sum of local basis functions built independently on each subdomain. In the online stage, for a given value of the parameter, the approximate solution is obtained by ensuring the weak continuity of the fluxes and of the solution itself thanks to a discontinuous Galerkin approach. The new method extends and generalizes the methods introduced by L. Iapichino, G. Rozza and A. Quarteroni [Comput. Methods Appl. Mech. Engrg. 221/222 (2012), 63–82] and by L. Iapichino [PhD thesis, EPF Lausanne, 2012].

This method has been successfully studied for elliptic problems and its extension to other kind of problem is currently under investigation.