

# Current status and perspectives of the Virtual Element Method

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## Talk Abstract

On January 2013, I and other five co-authors (Lourenço Beirão da Veiga, Franco Brezzi, Andrea Cangiani, Gianmarco Manzini, Donatella Marini) published the paper *Basic principles of Virtual Element Methods* [1]. In the Abstract we wrote: “We present, on the simplest possible case, what we consider as the very basic features of the (brand new) virtual element method. . . . The idea is quite general, and could be applied to a number of different situations and problems. Here however we want to be as clear as possible, and to present the simplest possible case that still gives the flavor of the whole idea.”

At the time of writing, (May 15, 2022) the “volley” paper (the code name comes from the fact that there were six players) has reached the number of 1001 citations on Google Scholar, which is remarkably high for a paper in basic numerical analysis that is less than 10 years old.

In my talk I will try to give an overview of the Virtual Element Method and to explain why it has become so popular in our scientific community. I will end up with a discussion of future perspectives.

**Keywords:** finite element method, virtual element method.

## References

- [1] L. Beirão da Veiga, F. Brezzi, A. Cangiani, G. Manzini, L.D. Marini, A. Russo, Basic principles of Virtual Element Methods, *Mathematical Models and Methods in Applied Sciences*, 23(1), 2013, pp. 199–214.