

Okonek, Christian; Teleman, Andrei

Seiberg-Witten invariants and the Van de Ven conjecture. (Les invariants de Seiberg-Witten et la conjecture de Van de Ven.) (French. Abridged English version) [Zbl 0867.14013](#)
C. R. Acad. Sci., Paris, Sér. I 321, No. 4, 457-461 (1995).

The paper gives a new and elegantly simple proof of the fact that a complex surface which is diffeomorphic to a rational surface is itself rational (i.e., being rational is a property which depends only on the differential structure of the surface). The proof relies on the use of Seiberg-Witten invariants and their interpretation as it has been developed by the authors themselves in a previous paper. – As a consequence of this result, the Van de Ven conjecture follows; i.e. it is proved that the Kodaira dimension of a complex surface is an invariant which depends only on the differential structure of the surface.

Reviewer: [A.Gimigliano \(Firenze\)](#)

MSC:

[14J26](#) Rational and ruled surfaces
[57R50](#) Differential topological aspects of diffeomorphisms
[14M20](#) Rational and unirational varieties
[57R55](#) Differentiable structures in differential topology

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Keywords:

diffeomorphism; complex surface diffeomorphic to a rational surface; Seiberg-Witten invariants; Kodaira dimension

Full Text: [arXiv](#)