

[Bruguières, Alain](#)

Filtration de Harder-Narasimhan et stratification de Shatz. (French) [Zbl 0577.14012](#)

Module des fibrés stables sur les courbes algébriques, Notes Éc. Norm Supér., Paris 1983, Prog. Math. 54, 81-104 (1985).

[For the entire collection see [Zbl 0546.00011](#).]

The notions of stable (semi-stable) vector bundles on a smooth projective curve X and of Harder-Narasimhan filtrations (flags) and associated polygons are first recalled. Next a family of vector bundles on X parametrized by a scheme S is considered and it is shown that the subsets of S corresponding to the vector bundles with a given Harder-Narasimhan polygon form a constructible stratification of S [the Shatz stratification; cf. *S. S. Shatz*, Compos. Math. 35, 163-187 (1977; [Zbl 0371.14010](#))].

A (Banach-) analytic version of this stratification was considered by *M. F. Atiyah* and *R. Bott* [Phil. Trans. R. Soc. Lond. A 308, 523-615 (1982; [Zbl 0509.14014](#))] and the author explains the connections, via a method of Le Potier.

Reviewer: [A. Dimca](#)

MSC:

[14F05](#) Sheaves, derived categories of sheaves, etc. (MSC2010)

[32S60](#) Stratifications; constructible sheaves; intersection cohomology (complex-analytic aspects)

Cited in **1** Review
Cited in **3** Documents

Keywords:

semi-stable vector bundle; Harder-Narasimhan filtrations; flags; constructible stratification; Shatz stratification