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$\Pi^r \mathbb{P}^1$ -bundle from which a surjective morphism to $\Pi^m \mathbb{P}^1$ exists. (English) Zbl 0788.14038
Geom. Dedicata 44, No. 3, 335-347 (1992).

Some years ago *E. Sato* [*J. Math. Kyoto Univ.* 25, 445-457 (1985; [Zbl 0587.13004](#))] studied smooth projective varieties which admit two different projective space bundle structures. – In the present paper the author deals with the similar problem to classify smooth projective varieties with two different $\mathbb{P}^1 \times \cdots \times \mathbb{P}^1$ -bundle structures over some $\mathbb{P}^1 \times \cdots \times \mathbb{P}^1$. More generally, he investigates varieties which admit a surjective morphism to some $\mathbb{P}^1 \times \cdots \times \mathbb{P}^1$ and have the structure of $\mathbb{P}^1 \times \cdots \times \mathbb{P}^1$ -bundle over a product of projective spaces and rational surfaces.

The result is that the variety considered is isomorphic to the product of the targets of the two given morphisms.

Reviewer: [B.Kreußler \(Kaiserslautern\)](#)

MSC:

- [14J60](#) Vector bundles on surfaces and higher-dimensional varieties, and their moduli
- [14M20](#) Rational and unirational varieties
- [14F05](#) Sheaves, derived categories of sheaves, etc. (MSC2010)

Keywords:

[projective bundle](#); [ruling](#); [Hilbert scheme](#); [Brauer group](#); [different bundle structures over varieties](#)

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