

## Semi-negative bundles and the Shafarevich conjecture

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### Abstract

The speaker and F. Bogomolov developed an approach to the production of holomorphic functions on universal covers  $\tilde{X}$  of projective varieties  $X$ . This approach uses negative vector bundles  $V$  on  $X$  having a nontrivial cocycle  $\alpha \in H^1(X, V)$  such that  $\rho^*\alpha = 0$ ,  $\rho : \tilde{X} \rightarrow X$ . In this talk the speaker will describe the applications to the Shafarevich conjecture of the above approach using semi-negative vector bundles. The speaker will also describe how some properties of the algebra of holomorphic functions on  $\tilde{X}$  are reflected in properties of  $\rho^* : Vect(X) \rightarrow Vect(\tilde{X})$ , the pullback map for isomorphism classes of vector bundles.