

- PHILIPPE BALBIANI, TINKO TINCHEV, *Modal definability in Euclidean modal logics*.

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A Kripke frame  $(W, R)$  is called Euclidean if the accessibility relation  $R$  satisfies the condition: for all  $s, t, u \in W$ , if  $sRt$  and  $tRu$  then  $tRu$  and  $uRt$ . A modal logic  $L$  is called Euclidean if it is determined by a nonempty class of Euclidean frames, i.e. if  $L$  is an extension of the modal logic  $K5$ . For every logic  $L$ , let  $Fr(L)$  be the class of all frames validating the theorems of  $L$ . A sentence  $A$  from the first-order language with equality and one binary predicate symbol is modally definable with respect to some class of frames if there is a modal formula  $\varphi$  from the classical propositional modal language such that  $A$  and  $\varphi$  are valid in the same frames from the class. Modal definability in a logic  $L$  problem asks whether there exists an algorithm that recognizes all modally definable with respect to  $Fr(L)$  sentences. Correspondence problem in a logic  $L$  asks whether there exists an algorithm that for any sentence  $A$  and any modal formula  $\varphi$  recognizes whether  $A$  and  $\varphi$  are valid in the same frames from  $Fr(L)$ .

In this talk we present all Euclidean modal logics  $L$  such that the modal definability in  $L$  is decidable problem. We demonstrate also that these logics are exactly the Euclidean logics in which the correspondence problem is decidable.