A New View on Intermediate Syllogisms

İbrahim Şentürk, Tahsin Oner

Ege University, Faculty of Sciences, Department of Mathematics, Izmir, Turkey
`ibrahim.senturk@ege.edu.tr`[1] , `tahsin.oner@ege.edu.tr`[2]

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In this paper, we handle Intermediate Syllogisms by bringing a new perspective. For this purpose, we try to construct a bridge from categorical syllogisms to intermediate syllogisms. In the sequel, we define a formal system PISLCD (Peterson's Intermediate Syllogistic Logic with Caroll Diagrams). This gives us a formal approach to logical reasoning with diagrams for representations of the fundamental Intermediate propositions and show that they are closed under the intermediate syllogistic criterion of inference which is the deletion of middle term.

From another angle, we clarify quantitive relation between two terms by means of bilateral diagrams and we analyze algebraic properties of Peterson's intermediate syllogisms in PISLCD. Finally, we obtain valid forms of Peterson Intermediate syllogisms with the help of elemination method.

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