1099-18-282 **ZBIGNIEW OZIEWICZ*** (oziewicz.zbigniew@gmail.com), Universidad Nacional Autonoma de Mexico, Facultad de Estudios Superiores Cuautitlan, CP 54714 Cuautitlan Izcalli, Estado M, Mexico. *Conceptual link among Frobenius and Lie algebras.*

We consider a binary algebra and co-algebra within abelian monoidal category of operad of graphs. We note that an arbitrary algebra possesses a priori five different trace-form (tensors - also called scalar products 2 ->0). Among them two are the Cartan-Killing trace-forms (introduced by Elie Cartan in his These in 1894 for the particular case of a Lie algebra). For Lie algebra these two trace-forms are equal. Namely from the left and the right regular representations of arbitrary algebra one can construct five a priori different trace-form. We are interested in utility and relations among these trace-forms assigned to every binary algebra. As a corollary we point that semi-simple Lie algebra is a non-associative Frobenius algebra. This work generalize considerations by Jerzy Kocik in his Ph. D, Thesis at Southern Illinois University at Carbondale in 1989. (Received February 10, 2014)