

**COMPLEX HOMOGENEOUS DIFFERENTIAL EQUATION OF FIRST AND SECOND ORDER THROUGH ITERATIONS****Jelena Vujaković<sup>1</sup>, Nataša Kontrec<sup>1</sup>, Stefan Panić<sup>1</sup>**<sup>1</sup> *University of Priština, Faculty of Sciences and Mathematics**Lole Ribara 29, Kosovska Mitrovica, Serbia**jelena.vujakovic@pr.ac.rs ; natasa.contrec@pr.ac.rs ; stefan.panic@pr.ac.rs***Abstract**

*The theory of complex differential equations represents an important mathematical discipline both from the theoretical point of view and from numerous applications. Its development was equally encouraged by mathematicians, physicists and engineers. By using the series-iterations method we have explained how the obtained results could be applied to the complex linear homogeneous first order and canonical complex linear second order differential equations. We have also formulated some conclusions about the determination of zero solutions of these equations. Even if that equation had no solutions we have found a particular integral which had zero for some choices of the integration constants.*

**Keywords:** a series-iteration method, differential equation, zero of solutions.