Dissertation Review Form
-for members of the Dissertation Commission-

Please write a review of the dissertation taking the following criteria into account, where appropriate:

- General remarks
- The significance and status of the dissertation in the field
- The sufficiency and quality of the material
- The adequacy of the methods used
- The validity of results
- The logic of the dissertation's structure
- The knowledge and use of literature in the field
- The project's contribution to the research area
- The author's input into the achievement of the dissertation results
- Language
- The shortcomings of the manuscript

Name of the PhD Candidate: Mr. ALEKSANDR MKRTCHYAN
Planned Date of Graduation: 13 October, year: 2015
Title of the Dissertation: CONTINUATION OF POWER SERIES BY ENTIRE AND MEROMORPHIC INTERPOLATION OF COEFFICIENTS
Would you please elaborate upon your review with reference to the above mentioned criteria in the box below. Please add extra pages if needed.

The dissertation is devoted to the problem of analytic extension (continuation) of holomorphic functions of one and several variables. The idea of the re-expansion of power series, in order to extend an analytic function presented by the series, was proposed by Karl Weierstrass as a foundation of the Theory of Analytic Functions. The topic of the dissertation relates to many classical and modern problems of Multidimensional Complex Analysis.

The analytic extendability of germs of analytic functions is the key property in problems of Complex Geometry, in Theory of Integral representations and in Analytic Theory of Partial Differential Equations. Despite of many classical examples of absence of extendability for functions of one complex variable in a circle, despite of deep investigations of (one- and multi dimensional) continuability across the boundary of the domain of the convergence, we see an obvious lack of progress in Theory of Analytic Continuation for functions of several variables. Thus the present dissertation is an important step in the right direction in the investigation of Analytic Continuation in the frames of Multidimensional Complex Analysis.

To my opinion, the material of this thesis is of a very high quality and it is sufficient for the author to be awarded the PhD degree.

The methods used in the dissertation are appropriate.

The results presented in the dissertation are provided by clear, valid and well illustrated proofs.

The dissertation consists of the introduction, two chapters, two appendices and considerable bibliography covering essential works in the field.

The first chapter of the dissertation is devoted to the problem of analytic continuation of classical (one-dimensional) power series. The main step made in the chapter is a generalization of the criterion for analytic continuation obtained by Arakelyan. Instead of using entire function for solving the problem, the author of dissertation used meromorphic functions of one complex variable. This leads to a more constructive criterion of the extendability than known before.

The second chapter contains results related to extendability of holomorphic functions of several complex variables. The author finds a criterion of the analytic continuation across a family of polyarcs.

The described results and three papers published by the author (without co-authors) in peer reviewed journals indexed in high ranked Citation Databases demonstrate a substantial contribution of the author to the Theory of Analytic Continuation and, in particular, a high author’s input into the achievement of the dissertation results.

The dissertation is written in a rather good English.
As for the shortcomings of the manuscript, I could mention some unimportant misprints only. An italic font is sometimes used inappropriately. Usually mathematical operators such as Res, Re, Im are written with normal fonts. For example in pages 51, 57, 64, 68,70.

Name of the Dissertation Commission Member : Shlapunov Alexander
Chair / Function : Chair of Theory of Function
Date : 05.10.2015

Signature : ........................................... *

* No signature required when submitted per email.

Please send the completed form to the Head of the office of the Doctoral and Post-doctoral, Faculty Performance Evaluation Office Grigorieva O.A. e-mail:grigorieva_00@mail.ru, tel. +7 (391) 206-22-62, address: 79/10 Svobodny pr., Room P6-16, 660041 Krasnoyarsk, Russia