Kamāl al-Dīn al-Fārisī's additions
to Abharī's "proof" of the parallel postulate

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ABSTRACT: This article is devoted to Kamāl al-Dīn al-Fārisī's (d. 1319) additions to the well-known al-Abharī's "proof" of the parallel postulate. These additions are found in only one codex, the manuscript Tunis 16167/7 also often referred to as one of the units of Tunis, al-Aḥmadiyya 5482 which is usually wrongly attributed to Qāḍī Zāde al-Rūmī.

KEYWORDS: Abharī, Fārisī, Ṭūsī, Qāḍī Zāde, Parallel Postulate, Arabic Euclidian geometry.

INTRODUCTION

Out of the ten works contained in the manuscript ms. Tunis 16167, the seventh (folios 74a-75a) has not been studied before, nor edited and discussed by any researcher. It contains two short additions to Athīr al-Dīn al-Abharī's (d. 1263) "proof" of Euclid's parallel postulate attributed to Kamāl al-Dīn al-Fārisī (d. 1319) by an anonymous writer. We present this manuscript with focus on Kamāl al-Dīn al-Fārisī's additions and propose an edition of this text with an English translation and notes.

Al-Abharī's addition to the Parallel Postulate is well known to researchers in the history of Arabic geometry. For example, in his History of non-Euclidean Geometry, Rosenfeld [1988, 85-86] states that al-Abharī reworked Euclid's Elements in a book known under the name *Iṣlāḥ al-Ustuqusāt* (Improvement of the Elements) and, that his attempt "to prove the parallel axiom enjoyed the greatest popularity in the 13th century as well as subsequent centuries".

This "proof" appears also in the commentary of Qāḍī Zāde al-Rūmī: *Sharḥ ashkāl al-taʾsīs* of al-Samarqandī with slight differences. In his commentary of