1145-L5-740   **Sergiy Koshkin*** (`koshkins@uhd.edu`). *Mathematical Intuition and the Secret of Platonism.* Preliminary report.

We will look into the interplay between modern perceptions of mathematical objects, and of the roles of intuition and proof in mathematics, and the structural and notational changes in algebra and formal logic in 19th century. The received view, with its emphasis on formal proof, is arguably in tension with the traditional mathematical platonism, which perceives intuition as a primary means of interacting with mathematical objects. We will then discuss an alternative, diagrammatic, view of a mathematician's work developed by C.S Peirce, and supported by his diagrammatic notation for predicate calculus, and argue that it gives a plausible resolution to this tension. Namely, a theory of intuition that explains both the indispensability of formal proofs, and the secret of the continued appeal of platonism to mathematicians. (Received September 13, 2018)