

# **Bridging between statements and solutions in series of mathematical problems: vocabulary, signs and style**

Centre Koyré, June 18th, 2013  
27, rue Damesme, salle des séminaires, 5e étage.

9h30-12h30

- o Introduction (Alain Bernard, Giovanna Cifoletti) : *why and whence today's questions ?*
- o Jean Christianidis *Numbers as kinds (in the statements) and numbers as hypostaseis (in the solutions) in Diophantus' Arithmetica.*
- o Jean-Marie Coquard *The diophantine narrative in L'Arithmetique of Simon Stevin*
- o Discussion

Lunch

14h30 -17h

- o Jeffrey Oaks : *The shift from enunciation to solution in medieval problems*
- o *Général discussion.*

Cette journée d'étude a lieu dans le cadre du programme de recherche collaboratif "les séries de problèmes, un genre au croisement des cultures" (Laboratoire d'excellence HASTEC, Histoire et anthropologie des savoirs, des techniques et des croyances; axe "cultures de sciences et technologies des savoirs"), et du programme ANR "ALGO" (Structures déductives algorithmiques dans les mathématiques pré-algébriques),

Giovanna Cifoletti– Alain Bernard (EHESS – Centre Koyré and HASTEC)

<http://algo.hypotheses.org/>  
<http://problemata.hypotheses.org/>  
<http://www.labex-hesam.eu/fr/13-hastec-presentation>

## Selective bibliography for the workshop

- Acerbi, Fabio. 2012. "I codici stilistici della matematica greca: dimostrazioni, procedure, algoritmi." *I codici stilistici della matematica greca: dimostrazioni, procedure, algoritmi* 101 (2): 167–216.
- Bernard, Alain. 2013. "Résoudre Un Problème Par L'algèbre Sans En Perdre Le Sens: Sur Les Traces de Diophante d'Alexandrie." *Repères IREM*.
- Bernard, Alain, and Jean Christianidis. 2011. "A New Analytical Framework for the Understanding of Diophantus's Arithmetica I–III." *Archive for History of Exact Sciences* 66 (1) (November 22): 1–69. doi:10.1007/s00407-011-0090-5.
- Christianidis, Jean. forthcoming. "Why Do We Speak of Algebra in Relation to Diophantus?" In *Proceedings of the Workshop "The International History of Algebra"* *Proceedings of the Workshop "The International History of Algebra"*. Beijing, August 27–31, 2011. Beijing.
- \_\_\_\_\_. forthcoming. "The Meaning of Hypostasis in Diophantus' Arithmetica"
- \_\_\_\_\_. 2007. "The Way of Diophantus: Some Clarifications on Diophantus' Method of Solution." *Historia Mathematica* 34 (3) (August): 289–305. doi:10.1016/j.hm.2006.10.003.
- Christianidis, Jean, and Jeffrey Oaks. 2013. "Practicing Algebra in Late Antiquity: The Problem-solving of Diophantus of Alexandria." *Historia Mathematica* 40 (2) (May): 127–163. doi:10.1016/j.hm.2012.09.001.
- Cifoletti, Giovanna. 2006. "From Valla to Viete: The Rhetorical Reform of Logic and Its Use in Early Modern Algebra." *Early Science and Medicine* 11 (4): 390–423. doi:10.1163/157338206778915152.
- \_\_\_\_\_. 2013. "Mathematics for jurists: Buteo's *Opera Mathematica*" Accessed June 17. <http://problemata.hypotheses.org/204>.
- Coquard, Jean-Marie. 2013. "Mathématiques et Dialectique Dans L'oeuvre de Simon Stevin". non édité, mémoire de master.
- Moyon, Marc. 2012. "Algèbre & Pratica Geometriæ En Occident Médiéval Latin: Abū Bakr, Fibonacci et Jean de Murs." In *Pluralité de L'algèbre à La Renaissance*, edited by S. Rommevaux, M. Spiesser, and M.R. Massa-Estève, 33–65.
- Oaks, Jeffrey A. 2007. "Medieval Arabic Algebra as an Artificial Language." *Journal of Indian Philosophy* 35 (5-6) (December 1): 543–575. doi:10.1007/s10781-007-9026-4.
- \_\_\_\_\_. 2009. "Polynomials and Equations in Arabic Algebra." *Archive for History of Exact Sciences* 63 (2) (March 1): 169–203. doi:10.1007/s00407-008-0037-7.
- \_\_\_\_\_. 2010. "Equations and Equating in Arabic Mathematics." *Archives Internationales D'histoire Des Sciences* 60 (165): 265–298.
- \_\_\_\_\_. 2012. "Algebraic Symbolism in Medieval Arabic Algebra." *Philosophica* The epistemic functions of algebraic symbolism: historical case studies Editors: Albrecht Heeffer & Maria Rosa Massa Esteve (87): 27–83.
- \_\_\_\_\_. 2013. "The Series of Problems in al-Khwārizmī's Algebra | Séries de Problèmes." Accessed June 5. <http://problemata.hypotheses.org/157>.
- Oaks, Jeffrey A., and Haitham Alkhateeb. 2007. "Simplifying Equations in Arabic Algebra." *Historia Mathematica* 34 (1): 45–61.
- Oaks, Jeffrey A., and Haitham M. Alkhateeb. 2005. "Māl, Enunciations, and the Prehistory of Arabic Algebra." *Historia Mathematica* 32 (4) (November): 400–425. doi:10.1016/j.hm.2005.03.002.