1156-70-366 **Jaime Burgos-Gracia**, **Alessandra Celletti**, **Catalin Gales**, **Marian Gidea** and **Wai-Ting Lam***, waiting.lam@yu.edu. *Hill four-body problem with oblate tertiary: an application to the Sun-Jupiter-Hektor-Skamandrios system.*

We consider a restricted four-body problem with a precise hierarchy between the bodies: two point-mass bigger bodies and a smaller one, all three with oblate shape, and an infinitesimal body in the neighborhood of the oblate body. The three heavy bodies are assumed to move in a plane under their mutual gravity, and the fourth body moves under the gravitational influence of the three heavy bodies, but without affecting them. We start by finding the triangular central configurations of the three heavy bodies; since three bodies are oblate, the triangle is scalene, rather than equilateral as in the point mass case. We assume that the three heavy bodies are in such a central configuration and we perform a Hill's approximation of the equations of motion describing the dynamics of the infinitesimal body in a neighborhood of the oblate body. Through the use of Hill's variables and a limiting procedure, this approximation amounts to sending the two other bodies to infinity. Finally, for the Hill approximation, we find the equilibrium points of the infinitesimal body and determine their stability. As a motivating example, we consider the dynamics of the moonlet Skamandrios of Jupiter's Trojan asteroid Hektor. (based on joint work with J. Burgos-Garcia, A. Celletti, C. Gales and M. Gidea) (Received January 27, 2020)