1106-34-391 **John R Graef*** (john-graef@utc.edu), Department of Mathematics, The University of Tennessee at Chattanooga, Chattanooga, TN 37403, and **Shapour Heidarkhani** and **Lingju Kong**. *Infinitely Many Periodic Solutions to Perturbed Second-order Impulsive Hamiltonian Systems.*

The authors investigate the existence of infinitely many periodic solutions to the perturbed impulsive Hamiltonian system with periodic boundary conditions

$$\begin{cases} -\ddot{u}(t) + A(t)u(t) = \lambda\nabla F(t,u(t)) + \mu\nabla G(t,u(t)) + \nabla H(u(t)), \quad a.e.\ t \in [0,T], \\ \Delta(\dot{u}_i(t_j)) = I_{ij}(u_i(t_j)), \qquad i = 1,2,\dots,N,\ j = 1,2,\dots,p, \\ u(0) - u(T) = \dot{u}(0) - \dot{u}(T) = 0, \end{cases} \tag{1}$$

where $u = (u_1, u_2, \dots, u_N)$, $N \geq 1$, $p > 1$, $T > 0$, $\lambda > 0$ and $\mu \geq 0$ are parameters, $0 = t_0 < t_1 < \cdots < t_p < t_{p+1} = T$, A is an $N \times N$ symmetric matrix, and $\Delta(\dot{u}_i(t_j)) = \dot{u}_i(t_j^+) - \dot{u}_i(t_j^-) = \lim_{t\to t_j^+} \dot{u}_i(t) - \lim_{t\to t_j^-} \dot{u}_i(t)$. (Received August 26, 2014)