1135-34-523 **Petr Zemánek*** (zemanekp@math.muni.cz), Kotlářská 2, 61137 Brno, Czech Rep. *On square integrable solutions and principal solutions for second order Sturm–Liouville dynamic equations.*

In the study of linear differential, difference, and dynamic equations or systems we can identify, among others, two substantial directions: the oscillation theory and the spectral theory. In the first one, roughly speaking, the numbers of zeros of real-valued solutions are investigated and a crucial role is played by the *principal solution*, which existence is equivalent to the nonoscillatory behavior. In the second one, associated operators are investigated and a crucial role is played by square integrable/summable complex-valued solutions. Especially, the square integrability/summability of the *Weyl solution* yields a lower bound for their number. In this talk, we show a close connection between the principal solution and the Weyl solution of the second order Sturm–Liouville dynamic equation

$$-[p(t)\,y^{\Delta}(t,\lambda)]^{\Delta}+q(t)\,y^{\sigma}(t,\lambda)=\lambda\,w(t)\,y^{\sigma}(t,\lambda),\quad t\in[a,\infty)\cap\mathbb{T},\tag{E}$$

where $\mathbb{T}$ is a time scale and the coefficients are real-valued. In addition, we present also further results concerning square integrable solutions of equation (E), which were derived by using the principal solution. Finally, we discuss a generalization of these results to linear Hamiltonian differential systems. (Received September 07, 2017)