1146-60-487 **Jewgeni H. Dshalalow** and **Ali Hussein Mahmood Al-Obaidi*** (aalobaidi2013@my.fit.edu), Department of Mathematical Sciences, Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901. *ON GENERALIZED POISSON MEASURES ON TOPOLOGICAL SPACES AND THEIR RAMIFICATIONS.*

Let $(\Omega, \mathcal{F}, \mathbb{P})$ be a probability space, $(\mathfrak{X}, \mathcal{B}_{\mathfrak{X}})$ be a Borel σ-algebra induced by a σ-compact Hausdorff space, and π be a marked Poisson random measure (r.m.) on $\mathcal{F} \otimes \mathcal{B}_{\mathfrak{X}}$ directed by a Borel measure μ. Then, $\mathbb{E}e^{-i\theta\pi} = e^{\mu[F(\theta)-1]}$ (F is the Fourier-Stieltjes transform of the marks) is the Fourier-type functional of r.m. π. Suppose now that π is perturbed by a Σ-measurable semi-Markov process η that makes π change its parameters subject to the evolution of η. We denote such modulation by π_η. Previously, we proved that such a new construction is also a r.m. We obtain an associated Fourier-type functional $\mathbb{E}e^{-i\theta\pi_\eta}$ reminiscent of that for conventional Poisson r.m. Among other related ramifications of this analysis, is a *geometric Poisson r.m. modulated by* η. This find applications to the stock market. Of further interest, is the exponential intensity of the process representing the mean exponential return rate of a stock modulated by η. We find a closed-form expression for this functional. (Received January 29, 2019)