

In the presented work the generalized integer valued processes GINAR founded on the Steutel and van Harn generalized operator are studied. Properties of this operator, which are based on the sum of i.i.d. random variables are investigated including the determination of the domain of the operator and suggestion of possible construction of this operator. The attention is given on a weak stationary GINAR(p), the main properties of this process are described and it is shown that this process has an AR(p) representation, where the white noise consists of martingale differences. Further, the parameter estimators are described and consequently tested on extensive simulation with differently distributed innovations. The results are compared according to MSE. The work also contains a real data application. At the end the vector processes VGINAR are mentioned, that can also have a VAR representation. The functions for the program environment R are included.