# Simulation of ARMAX model for

Juan S. Cárdenas R.
*Student*
*Universidad EAFIT*
Medellín, Colombia
jscardenar@eafit.edu.co

David Plazas E.
*Student*
*Universidad EAFIT*
Medellín, Colombia
dplazas@eafit.edu.co

***Abstract*—**
***Index Terms*—**

## I. Introduction

## II. Problem Formulation

## III. Theoretical Approach

As previously mentioned, this works is devoted to the simulation and short analysis of an ARMAX system for ; hereby, the general ARMAX model is presented:

$$z_{t+1} = \sum_{i=0}^{h_1} a_i z_{t-i} + \sum_{i=0}^{h_2} b_i u_{t-i} + \sum_{i=0}^{h_3} c_i \xi_{t-i} \tag{1}$$

where $u_k$ are external inputs and $\xi_k$ are random noises. In this specific case, the model obtained in [1],

$$\begin{aligned} Y_t =& 237.565 + 0.426 Y_{t-1} + a_t - 0.153 a_{t-1} + 8.9087 d_{1,t} \\ & - 1.557 d_{7,t} + 31.919 d_{8,t} - 2.045 d_{9,t} \end{aligned} \tag{2}$$

## IV. Numerical Aspects

## V. Numerical Results

## VI. Conclusions

## References

[1] Y. Li, Y. Su, and L. Shu, "An armax model for forecasting the power output of a grid connected photovoltaic system," *Renewable Energy*, vol. 66, pp. 78–89, 2014.