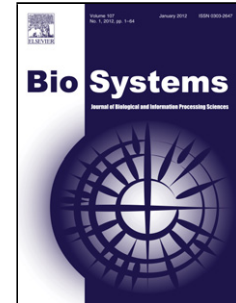


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## Estimation of plasma insulin concentration under glycemc variability using nonlinear filtering techniques

Luis Omar Avila<sup>1</sup>, Mariano De Paula<sup>2</sup> and Carlos Roberto Sanchez-Reinoso<sup>3</sup>

<sup>1</sup>Corresponding author: Luis Omar Avila

Laboratorio de Investigación y Desarrollo en Inteligencia Computacional (LIDIC) - Laboratorio de Mecatrónica (LABME), CONICET-UNSL, Av. Ejército de los Andes 950, D5700BPB San Luis, Argentina.

Phone: +54-0266-4420823

Email: [loavila@unsl.edu.ar](mailto:loavila@unsl.edu.ar)

Orcid ID: [0000-0003-0321-068X](https://orcid.org/0000-0003-0321-068X)

<sup>2</sup>Mariano De Paula

INTELYMEC group, Centro de Investigaciones en Física e Ingeniería del Centro CIFICEN – UNICEN – CICpBA – CONICET, Av. Del Valle 5537, B7400JWI Olavarría, Argentina.

Phone: +54-02284-451055.

Email: [mariano.depaula@fio.unicen.edu.ar](mailto:mariano.depaula@fio.unicen.edu.ar)

Orcid ID: [0000-0001-7582-9188](https://orcid.org/0000-0001-7582-9188)

<sup>3</sup>Carlos Roberto Sanchez-Reinoso

Centro De Investigación y Desarrollo en Modelado, Simulación y Optimización de Sistemas Electrónicos (CIDMOS), Universidad Nacional de Catamarca, Av. Maximio Victoria 55, K4700 Catamarca, Argentina.

Phone: +54-0383-4427807

Email: [csanchezreinoso@santafe-conicet.gov.ar](mailto:csanchezreinoso@santafe-conicet.gov.ar)

### Abstract

The ultimate goal of an artificial pancreas is finding the optimal insulin rates that can effectively reduce high blood glucose (BG) levels in type 1 diabetic patients. To achieve this, most closed-loop control strategies need to compute the optimal insulin action on the basis of precedent glucose and insulin levels. Unlike glucose levels which can be measured in real-time, unavailability of insulin sensors makes it essential the use of mathematical models to estimate plasma insulin concentrations. Between others, filtering techniques based on a generalization of the Kalman filter

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