

## STUDIES OF CO<sub>2</sub> CONCENTRATION IN CLIMATIZED ENVIRONMENTS AND TYPES OF CONTROLS

**Sebastião Cardoso**

Universidade de Taubaté

Rua Daniel Danelli-s/s

CEP:12060-440; Taubaté- SP.

[cardoso@unitau.br](mailto:cardoso@unitau.br)

Norberto Januário Pereira

[norberto.januario@terra.com.br](mailto:norberto.januario@terra.com.br)

**Roberto Akio Komatsu**

***Abstract.** This research has the purpose of presenting the air conditioning system with CO<sub>2</sub> concentration control. Beginning with a brief historical evolution and the necessity of the air conditioning in environment inhabited for the human being, are presented also some norms and recommendations are presented. It is also elaborated thermal load calculations simulating variations of the people quantity, lights, equipment and compared the system of fixed external air outflow (traditional system, used in the majority of the projects of air conditioning systems) with the system of variable external air outflow. This system is indicated for offices, banks, shops and auditoriums, where the thermal load follows the fluctuations of the number of people, 72,9% of energy can be save compared to the fixed external air outflow system.*

**Keywords:** Air Conditioner, CO<sub>2</sub> control and AVV, Climate and building automation, thermal comfort.