

# Sample Paper for CEC 2007: The IEEE Congress on Evolutionary Computation

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## I. INTRODUCTION

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## II. MAIN RESULTS

The main results and findings go here. You may also have a section for Preliminaries before this section.

First, if you do not want to number an equation, do not use `\begin{equation}`–`\end{equation}`. You can either use `[ -\]` or `$$-$$`. For example, we have

$$\dot{x} = f(x, u) + g(x, u)$$

or

$$\ddot{s} = G(s, t)$$

where  $f$ ,  $g$ , and  $G$  are functions. It is recommended that you do not number an equation if it will not be cited in your paper.

Equation (1) is numbered! The following equation is produced using `\begin{equation}`–`\end{equation}`. The main objective function for each unit can be represented by a quadratic cost function given by

$$F_i(P_i) = a_i + b_i P_i + c_i P_i^2 \quad (1)$$

where  $a_i$ ,  $b_i$ , and  $c_i$  in (1) are the fuel consumption cost coefficients of unit  $i$ , and  $P_i$  represents the value of the power to be determined for unit  $i$ .

Recently, it is popular to use `\begin{align}`–`\end{align}` instead of `\begin{eqnarray}`–`\end{eqnarray}`. Equation (2)

is produced using  $\begin{aligned} \end{aligned}$ . The objective function for each unit can be represented by

$$\begin{aligned} \dot{x}_l &= \sum_{i=1}^m \frac{c_{P_{x_i}} e^{k_{x_i} \bar{x}_i} + c_{N_{x_i}} e^{-k_{x_i} \bar{x}_i}}{e^{k_{x_i} \bar{x}_i} + e^{-k_{x_i} \bar{x}_i}} \\ &\quad + \frac{1}{2} \sum_j^q (c_{P_{u_j}} + c_{N_{u_j}}) \\ y &= A_0 + A_1 \tanh(K_x \bar{x}) + B \tanh(K_u \bar{u}) \\ &= F(x), \end{aligned} \quad (2)$$

where  $F(x)$  is a function.

Well, the same equation, when it is produced using  $\begin{aligned} \end{aligned}$  becomes (3):

$$\begin{aligned} \dot{x}_l &= \sum_{i=1}^m \frac{c_{P_{x_i}} e^{k_{x_i} \bar{x}_i} + c_{N_{x_i}} e^{-k_{x_i} \bar{x}_i}}{e^{k_{x_i} \bar{x}_i} + e^{-k_{x_i} \bar{x}_i}} \\ &\quad + \frac{1}{2} \sum_j^q (c_{P_{u_j}} + c_{N_{u_j}}) \\ y &= A_0 + A_1 \tanh(K_x \bar{x}) + B \tanh(K_u \bar{u}) \\ &= F(x), \end{aligned} \quad (3)$$

where  $F(x)$  is a function. You get the idea!

#### A. Example of a Figure

An example of a floating figure using the graphicx package. Note that `\label` must occur AFTER (or within) `\caption`. For figures, `\caption` should occur after the `\includegraphics`. You also need to know how to cite your figure. Here is an example: Figure 1 show our simulation results.

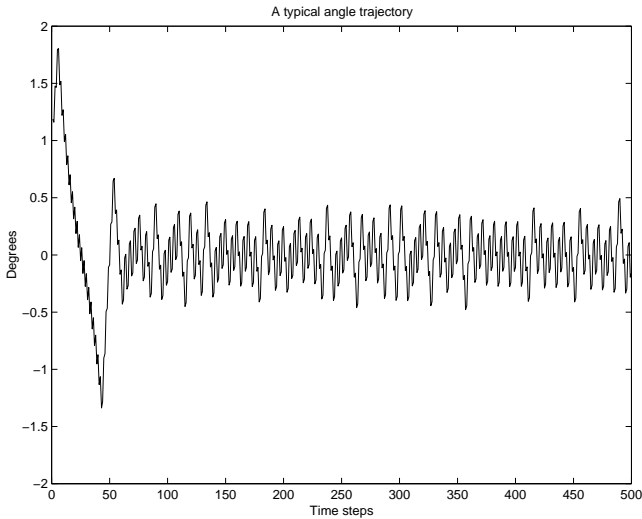


Fig. 1. Simulation results

#### B. Figures and Tables

Please follow the style in the sample paper when generating your figures and tables.

TABLE I  
PAGE LIMIT

Page limits	8
Excess page charge	\$150/page

#### C. Page Limit and Overlength Page Charges

A paper submitted to this conference should be prepared in a single-spaced, two-column format and its length must be kept to 8 pages and below. In exceptional circumstances up to two additional pages will be permitted for a charge of \$150 per additional page. Table I shows the page limit and page charge schedule.

Another example of table is shown in Table II.

TABLE II  
COMPARISON RESULTS WITH METHODS IN [2] (40 UNIT SYSTEM WITH VALVE-POINT EFFECTS)

Method	Mean time	Best time	Mean cost	Maximum cost	Minimum cost
CEP	928.36	926.20	124793.5	126902.9	123488.3
FEP	646.16	644.28	124119.4	127245.9	122679.7
MFEP	1056.8	1054.2	123489.7	124356.5	122647.6
IFEP	632.67	630.36	123382.0	125740.6	122624.4
TM	94.28	91.16	123078.2	124693.8	122477.8

### III. CONCLUSIONS

The conclusion goes here. This sample paper is for latex users. Authors may follow the sample paper here to produce their own papers by following the same format as this sample paper.

#### APPENDIX

Put your appendix here if you have any.

#### ACKNOWLEDGMENT

The authors would like to thank Mr. XYZ for his/her help. This work was supported in part by the National Science Foundation under grant no. XXXXX, etc.

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