WILKINSON POWER DIVIDER SIMULATION

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***Resumen*—El divisor de potencia de Wilkinson es un dispositivo pasivo con todos sus puertos emparejados,no tiene perdidas cuando el puerto de entrada se excita y los puertos de salida estan aislados,esta simulacion imlementara un divisor de potencia para el rango de frecuencia de 0 a 2GHz.**

***Términos Clave*— Introducimos nuestros términos clave en orden alfabetico, separado por comas. Para una lista de sugerencias de palabras o términos clave visitar http://www.ieee.org/organizations/pubs/ani_ prod/keywrd98.txt**

I. Problema

If your paper is intended for a conference, please contact your conference editor concerning acceptable word processor formats for your particular conference.

IEEE will do the final formatting of your paper. If your paper is intended for a conference, please observe the conference page limits.

I-A. *Concepto Principal*

El problema abarcará lo que se pretende resolver o se resolvió con el informe, se tiene que ser claro y conciso.

I-B. *Abbreviations and Acronyms*

Define abbreviations and acronyms the first time they are used in the text, even after they have already been defined in the abstract. Abbreviations such as IEEE, SI, ac, and dc do not have to be defined. Abbreviations that incorporate periods should not have spaces: write “C.N.R.S.,” not “C. N. R. S.” Do not use abbreviations in the title unless they are unavoidable (for example, “IEEE” in the title of this article).

II. Objetivos

Use either SI (MKS) or CGS as primary units. (SI units are strongly encouraged.) English units may be used as secondary units (in parentheses). This applies to papers in data storage. For example, write “15 Gb/cm^2 (100 Gb/in^2).” An exception is when English units are used as identifiers in trade, such as “3 disk drive.” Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity in an equation.

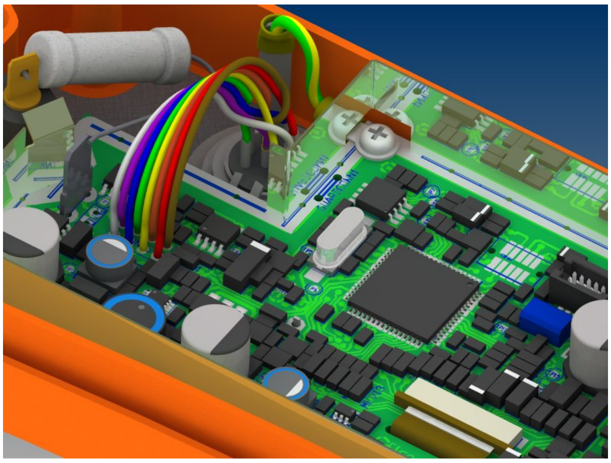

Figura 1. A gull

The SI unit for magnetic field strength H is A/m. However, if you wish to use units of T, either refer to magnetic flux density B or magnetic field strength symbolized as $\mu_0 H$. Use the center dot to separate compound units, e.g., “A·m^2.”

II-A. *Idea Principal*

Se plantea de manera general lo que se hará o se hizo para solucionar el problema.

$$\left.\begin{aligned} B' &= -\partial \times E, \\ E' &= \partial \times B - 4\pi j, \end{aligned}\right\} \qquad \text{Maxwell's equations} \tag{1}$$

The word “data” is plural, not singular. The subscript for the permeability of vacuum μ_0 is zero, not a lowercase letter “o.” The term for residual magnetization is “remanence”; the adjective is “remanent”; do not write “remnance” or “remnant.” Use the word “micrometer” instead of “micron.” A graph within a graph is an “inset,” not an “insert.” The word “alternatively” is preferred to the word “alternately” (unless you really mean something that alternates). Use the word “whereas” instead of “while” (unless you are referring to simultaneous events). Do not use the word “essentially” to mean “approximately” or “effectively.” Do not use the word “issue” as a euphemism for “problem.” When compositions are not specified, separate chemical symbols by en-dashes; for example, “NiMn” indicates the intermetallic compound $Ni_{0,5}Mn_{0,5}$ whereas “Ni–Mn” indicates an alloy of some composition Ni_xMn_{1-x}.

Este primer párrafo puede contener auspiciadores u organizaciones que colaboraron con la realización de esta parte del proyecto y mencionar de manera expecífica que papel puntual tuvieron en el proceso... ”This work was supported in part by the U.S. Department of Commerce under Grant BS123456.”

Los siguientes párrafos pueden contebner datos específicos de los autores del proyecto, por ejemplo ”F. A. Author is with the National Institute of Standards and Technology, Boulder, CO 80305 USA (e-mail: author boulder.nist.gov)”

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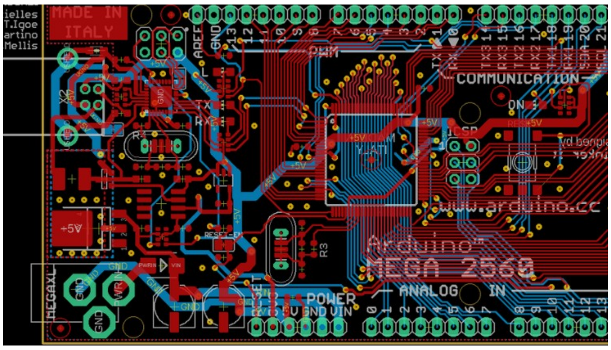

Figura 2. A gull

Figura 3. A gull

III. Planteamiento/Procedimiento

III-A. *Types of Graphics*

The following list outlines the different types of graphics published in IEEE journals. They are categorized based on their construction, and use of color/shades of gray:

III-A1. Color/Grayscale figures: Figures that are meant to appear in color, or shades of black/gray. Such figures may include photographs, illustrations, multicolor graphs, and flowcharts.

III-A2. Line Art figures: Figures that are composed of only black lines and shapes. These figures should have no shades or half-tones of gray, only black and white.

III-A3. Author photos: Head and shoulders shots of authors that appear at the end of our papers.

III-B. *Lineas de código*

```
import numpy as np
class NeuralNetwork:
  def __init__(self,
      no_of_in_nodes,
      no_of_out_nodes,
      no_of_hidden_nodes,
      learning_rate):
    self.no_of_in_nodes = no_of_in_nodes
    self.no_of_out_nodes = no_of_out_nodes
    self.no_of_hidden_nodes = no_of_hidden_nodes
    self.learning_rate = learning_rate
    self.create_weight_matrices()

  def create_weight_matrices(self):
    rad = 1 / np.sqrt(self.no_of_in_nodes)
    X = truncated_normal(mean=0, sd=1, low=-rad, upp=rad)
    self.weights_in_hidden = X.rvs((self.no_of_hidden_nodes,
         self.no_of_in_nodes))
    rad = 1 / np.sqrt(self.no_of_hidden_nodes)
    X = truncated_normal(mean=0, sd=1, low=-rad, upp=rad)
    self.weights_hidden_out = X.rvs((self.no_of_out_nodes,
         self.no_of_hidden_nodes))


  def train(self):
    pass

  def run(self):
    pass


if __name__ == "__main__":
  simple_network = NeuralNetwork(no_of_in_nodes = 3,
                   no_of_out_nodes = 2,
                   no_of_hidden_nodes = 4,
                   learning_rate = 0.1)
  print(simple_network.weights_in_hidden)
  print(simple_network.weights_hidden_out)
```

Ahora compila usando `gcc`:

```
$ gcc -o hello hello.c
```

III-B1. Tables: Data charts which are typically black and white, but sometimes include color.

III-C. *Multipart figures*

Figures compiled of more than one sub-figure presented side-by-side, or stacked. If a multipart figure is made up of multiple figure types (one part is lineart, and another is grayscale or color) the figure should meet the stricter guidelines.

III-D. *File Formats For Graphics*

Format and save your graphics using a suitable graphics processing program that will allow you to create the images as PostScript (PS), Encapsulated PostScript (.EPS), Tagged Image File Format (.TIFF), Portable Document Format (.PDF), Portable Network Graphics (.PNG), or Metapost (.MPS), sizes them, and adjusts the resolution settings. When submitting your final paper, your graphics should all be submitted individually in one of these formats along with the manuscript.

$$\frac{\partial u}{\partial t} = h^2 \left(\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{\partial^2 u}{\partial z^2} \right) \tag{2}$$

Cuadro I
UNITS FOR MAGNETIC PROPERTIES

Symbol	Quantity	Conversion from Gaussian and CGS EMU to SI [a]
Φ	magnetic flux	1 Mx $\rightarrow 10^{-8}$ Wb $= 10^{-8}$ V·s
B	magnetic flux density, magnetic induction	1 G $\rightarrow 10^{-4}$ T $= 10^{-4}$ Wb/m^2
H	magnetic field strength	1 Oe $\rightarrow 10^3/(4\pi)$ A/m
m	magnetic moment	1 erg/G $=$ 1 emu $\rightarrow 10^{-3}$ A·m^2 $= 10^{-3}$ J/T
M	magnetization	1 erg/(G·cm^3) $=$ 1 emu/cm^3 $\rightarrow 10^3$ A/m
$4\pi M$	magnetization	1 G $\rightarrow 10^3/(4\pi)$ A/m
σ	specific magnetization	1 erg/(G·g) $=$ 1 emu/g $\rightarrow$ 1 A·m^2/kg
j	magnetic dipole moment	1 erg/G $=$ 1 emu $\rightarrow 4\pi \times 10^{-10}$ Wb·m
J	magnetic polarization	1 erg/(G·cm^3) $=$ 1 emu/cm^3 $\rightarrow 4\pi \times 10^{-4}$ T
χ, κ	susceptibility	$1 \rightarrow 4\pi$
χ_ρ	mass susceptibility	1 cm^3/g $\rightarrow 4\pi \times 10^{-3}$ m^3/kg
μ	permeability	$1 \rightarrow 4\pi \times 10^{-7}$ H/m $= 4\pi \times 10^{-7}$ Wb/(A·m)
μ_r	relative permeability	$\mu \rightarrow \mu_r$
w, W	energy density	1 erg/cm^3 $\rightarrow 10^{-1}$ J/m^3
N, D	demagnetizing factor	$1 \rightarrow 1/(4\pi)$

Vertical lines are optional in tables. Statements that serve as captions for the entire table do not need footnote letters.
[a]Gaussian units are the same as cg emu for magnetostatics; Mx = maxwell, G = gauss, Oe = oersted; Wb = weber, V = volt, s = second, T = tesla, m = meter, A = ampere, J = joule, kg = kilogram, H = henry.

IV. CONCLUSIONES

A conclusion section is not required. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

REFERENCIAS