Hide gridlines (Table | Hide Gridlines). Spell check the table to remove any red underlines that indicate spelling errors. Adjust magnification (View | Zoom) such that you can view the entire table *at maximum area* when you select View | Full Screen. Move the cursor so that it is out of the way. Press “Print Screen” on your keyboard; this copies the screen image to the Windows clipboard. Open Microsoft *Photo Editor* and click Edit | Paste as New Image. Crop the table image (click Select button; select the part you want, then Image | Crop). Adjust the properties of the image (File | Properties) to monochrome (1 bit) and 600 pixels per inch. Resize the image (Image | Resize) to a width of 3.45 inches. Save the file (File | Save As) in TIFF with no compression (click “More” button).

Most graphing programs allow you to save graphs in TIFF; however, you often have no control over compression or number of bits per pixel. You should open these image files in a program such as Microsoft *Photo Editor* and re-save them using no compression, either 1 or 8 bits, and either 600 or 220 dpi resolution (File | Properties; Image | Resize). See Section II-D2 for an explanation of number of bits and resolution. If your graphing program cannot export to TIFF, you can use the same technique described for tables in the previous paragraph.

A way to convert a figure from Windows Metafile (WMF) to TIFF is to paste it into Microsoft *PowerPoint,* save it in JPG format, open it with Microsoft *Photo Editor* or similar converter, and re-save it as TIFF.

Microsoft *Excel* allows you to save spreadsheet charts in Graphics Interchange Format (GIF). To get good resolution, make the *Excel* charts *very* large. Then use the “Save as

HTML” feature (see [http://support.microsoft.com/support/ kb/articles/q158/0/79.asp](http://support.microsoft.com/support/)). You can then convert from GIF to TIFF using Microsoft *Photo Editor,* for example.

No matter how you convert your images, it is a good idea to print the TIFF files to make sure nothing was lost in the conversion.

If you modify this document for use with other IEEE journals or conferences, you should save it as type “Word 97-2000 & 6.0/95 - RTF (\*.doc)” so that it can be opened by any version of *Word.*

An IEEE copyright form should accompany your final submission. These will be custom generated for you at the submission time. Authors are responsible for obtaining any security clearances.

# MATH

If you are using *Word,* use either the Microsoft Equation Editor or the *MathType* add-on ([http://www.mathtype.com](http://www.mathtype.com/)) for equations in your paper (Insert | Object | Create New | Microsoft Equation *or* MathType Equation). “Float over text” should *not* be selected.

# Units

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/cm2 (100 Gb/in2).” An exception is when English units are used as identifiers in trade, such as “3½ in 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. 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 µ0*H*. Use the center dot to separate.

***Instructions about final paper and figure submissions in this document are for IEEE journals; please use this document as a “template” to prepare your manuscript. For submission guidelines, follow instructions on paper submission system as well as the Conference website.*** Because IEEE will do the final formatting of your paper, you do not need to position figures and tables at the top and bottom of each column. In fact, all figures, figure captions, and tables can be at the end of the paper. Large figures and tables may span both columns. Place figure captions below the figures; place table titles above the tables. If your figure has two parts, include the labels “(a)” and “(b)” as part of the artwork. Please verify that the figures and tables you mention in the text actually exist. **Please do not include captions as part of the figures. Do not put captions in “text boxes” linked to the figures. Do not put borders around the outside of your figures.** Use the abbreviation “Fig.” even at the beginning of a sentence. Do not abbreviate “Table.” Tables are numbered with Roman numerals.

Figure axis labels are often a source of confusion. Use words rather than symbols. As an example, write the quantity “Magnetization,” or “Magnetization *M*,” not just “*M*.” Put units in parentheses. Do not label axes only with units. As in Fig. 1, for example, write “Magnetization (A/m)” or “Magnetization (Am-1),” not just “A/m.” Do not label axes with a ratio of quantities and units. For example, write “Temperature (K),” not “Temperature/K.”

Multipliers can be especially confusing. Write “Magnetization (kA/m)” or “Magnetization (103 A/m).” Do not write “Magnetization (A/m) ´ 1000” because the reader would not know whether the top axis label in Fig. 1 meant 16000 A/m or 0.016 A/m. Figure labels should be legible, approximately 8 to 12 point type.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Speed (mph)** | **Driver** | **Car** | **Engine** | **Date** |
| 407.447 | Craig Breedlove | Spirit of America | GE J47 | 8/5/63 |
| 413.199 | Tom Green | Wingfoot Express | WE J46 | 10/2/64 |
| 434.22 | Art Arfons | Green Monster | GE J79 | 10/5/64 |
| 468.719 | Craig Breedlove | Spirit of America | GE J79 | 10/13/64 |
| 526.277 | Richard Noble | Thrust 2 | RR RG 146 | 10/4/83 |

The following data were collected using a car with a water clock set to release a drop in

a unit of time and a meter stick. The car rolled down an inclined plane. Three trials were

run. Create a data table with an average distance column and an average velocity column,

create an average distance-time graph, and draw the best-fit line or curve. Estimate the

car’s distance traveled and velocity at six drops of water. Describe the motion of the car. Is

it going at a constant speed, accelerating, or decelerating? How do you know? Ms. Hubert’s afterschool students took a survey of the 600 students at Morales Elementary

School. Students were asked to select their favorite pet from a list of eight animals.

Lizard 25, Dog 250, Cat 115, Bird 50, Guinea pig 30, Hamster 45, Fish 75,

Ferret 10. he following data were collected using an electromagnet with a 1.5 volt battery, a switch,

a piece of #20 insulated wire, and a nail. Three trials were run. Safety precautions in

repeating this experiment include using safety goggles or safety spectacles and avoiding

short circuits.



Color printing of figures is available, but is billed to the authors (approximately $1300, depending on the number of figures and number of pages containing color). Include a note with your final paper indicating that you request color printing. **Do not use color unless it is necessary for the proper interpretation of your figures.** If you want reprints of your color article, the reprint order should be submitted promptly. There is an additional charge of $81 per 100 for color reprints.

|  |  |
| --- | --- |
| Time (drops of water) | Distance (cm) |
| 1 | 10,11,9 |
| 2 | 29, 31, 30 |
| 3 | 59, 58, 61 |
| 4 | 102, 100, 98 |
| 5 | 122, 125, 127 |

