

# An example of extended abstract showing the style of equations and tables

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## SUMMARY

This is an example showing pages containing equations and tables. Page layout was produced by L<sup>A</sup>T<sub>E</sub>X2 $\epsilon$ . Two-column page layout was made by `multicolumn.sty`. A portable document format (pdf) file was produced by Adobe Acrobat PDF Writer. Preferable expressions for mathematics will be shown in the text. Also preferable expressions for tables will be shown. Equations are normally within single column width. However, full width expression will be preferable for long equations. Table width is within single column or in full width. For large tables landscape page can be used. Two types of table, single column width and full width, are shown in the text.

**KEY WORDS:** seismic wave, borehole method, reflection seismology

## INTRODUCTION

Equations and tables play an very important role for technical documents. In order to make clear and impressive camera-ready extended abstract, care must be taken for printing equations and tables. Table width is often large and will not be able to written within a single column width. In such a case, full width table is necessary. Sometimes equations include lengthy expression and cannot be written within single width for clear and understandable expression. It is better to write equations in full width style. General rules for treating mathematical expression and tables will be shown in the text.

## MATHEMATICAL MATERIAL

In the text, the shilling fraction using the solidus(/) should be used rather than the built-up fraction(two decks), e.g., 3/4 rather than  $\frac{3}{4}$ .

Fractional exponents should be used instead of radicals wherever feasible. Radicals are preferred, however, for simple square roots, e.g.,  $\sqrt{2}$  rather than  $2^{1/2}$ .

When referring to equations by number in the text, put the numbers in parentheses, e.g., "As shown in equation (10), ...". Equations in Appendix A should be numbered with the prefix A-, e.g., (A-1).

The single English letters that represent unknowns and variables are set in italic type, even

when they are used in subscripts and superscripts. Use  $\exp(-\alpha t)$  for exponent rather than  $e^{-\alpha t}$ . Numerals are set in roman type. Also set in roman are the abbreviations for units of measurement and abbreviations such as *cos*(cosine), *log*(logarithm), *var*(variance). Boldface italic is used for vectors and tensors and in matrix notation.

There is no rule for the usage of built-up fraction and virgule (solidus, diagonal, slash or shilling mark). However, try to shorten equation length within single column width.

$$\phi = m \tan^{-1} \left[ -\frac{2Q \frac{\Delta f}{f_0} (\sqrt{Q_1} + \sqrt{Q_2})}{(\epsilon + 1) - (2Q \frac{\Delta f}{f_0})} \right] \quad (1)$$

$$\phi = m \tan^{-1} [-2Q(\Delta f/f_0)(\sqrt{Q_1/Q_2} + \sqrt{Q_2/Q_1}) / \{(\epsilon + 1) - (2Q\Delta f/f_0)\}] \quad (2)$$

In this case, an equation style (1) is preferable rather than the style (2).

## TABLES

Tables should appear within the text close to they are first cited. Be sure that the data is concisely presented and that any abbreviations used are defined. Type tables in 10 point. Number tables sequentially in the text. Table number/table title head is left-aligned above the table. The word "Table" and the number in the same font face as that used in the text, and punctuated with a period. Type table title in the same font and point size as the text. Table footnote are the same point size as the text. Table titles should be aligned left. For table width, use single width that is within a column width, or full width that is larger than the column width but within full width of the text area. You can use a landscape page for large tables, if necessary. Full width tables are suggested to be placed at the head or bottom of the page. Table 1 is an example of full width table. Table 2 is an example of single width table.

Table 2 should be continued in the same column, and long equation is preferably written in full width. You may leave a blank area after Table 2 because Table 2 should not be divided into two columns and the succeeding text changes to a full width style for writing a long equation.

Table 1. An example of full width table.

Term	SI (International System)		egs System	
	Symbol	Unit	Unit	Symbol
Magnetic field strength	$\mathbf{B}=\mu_0(\mathbf{H}+ \mathbf{M})$	1 tesla	= 10 <sup>4</sup> gauss	$\mathbf{B}=\mathbf{H}+ 4\pi\mathbf{I}$
Magnetic intensity		= 1 weber/m <sup>2</sup>	= 10 <sup>9</sup> gamma	
Magnetic induction	= $\phi$ /area	= 1newton/amp-m	= 10 <sup>4</sup> maxwell/cm <sup>2</sup>	
Magnetic flux density				
Magnetic dipole (dipole moment)	$\mathbf{m} = \mathbf{pd}$	1 ampere-meter <sup>2</sup>	= 10 <sup>10</sup> pole cm	$\mathbf{pd}$

Table 2. SI base and supplementary units

Quantity	SI unit	Symbol
Length	meter or metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Amount of substance	mole	mol
Luminous intensity	candela	cd
Plane angle	radian	rad
Solid angle	steradian	sr

Table footnote or table caption appears here. Note that the kilogram is not a unit of force(wight). The word "weight" is often ambiguous and its use should be avoided. The temperature unit kelvin is not "degree kelvin."

## LONG EQUATION

If equations are deemed to be written in full width for understandable expression, the two-column text style can be temporarily changed to a full width single column text style.

$$\mathcal{F}^{SV}(p, \phi) \sim [\sin \lambda \cos 2\delta \sin(\phi - \phi_S) - \cos \lambda \cos \delta \cos(\phi - \phi_S)](1 - 2\beta_S^2 p^2 / r_S^2) + [\cos \lambda \sin \delta \sin 2(\phi - \phi_S) - \sin \lambda \sin 2\delta(1 + \sin^2(\phi - \phi_S))] \frac{\beta_S^2 p}{r_S} \left( \frac{1}{\beta_S^2} - \frac{p^2}{r_S^2} \right)^{1/2} \quad (3)$$

## REFERENCES

- Strickland, F. G. and Ren, N. (1980): Use of differential strain curve analysis in predicting in-situ stress state for deep wells, *Proc. 21st US Symposium on Rock Mech.*, 523-532.
- Dey, T. N. and Brown, D. W. (1986): Stress measurements in a deep granitic rock mass using hydraulic fracturing and differential strain curve analysis, *Int. Symposium on Rock Stress and Rock Stress Measurements*, 351-358.