LaTeX: arte e beleza na escrita científica*

Vale a pena aprender?

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*Material acompanhante do mini-curso: Introdução ao LaTeX: Dicas, Usos e Práticas

Um pouco de comparação visual

A legibilidade de um texto é afetada pela justificação e hifenização

TeX usa algoritmos sofisticados para justificar e hifenizar textos

No. de hifenizações é muito menor no TeX!

Microsoft Word 2008

Call me Ishmael. Some years ago – never mind how long precisely – having little or no money in my purse, and noth-
ing particular to interest me on shore, I thought I would sail about a little and see the wa-
tery part of the world. It is a way I have of driving off the spleen, and regulating the cir-
culation. Whenever I find my-
self growing grim about the mouth; whenever it is a damp, drizzly November in my soul; whenever I find myself invol-
untarily pausing before coffin warehouses, and bringing up the rear of every funeral I meet; and especially whenever my hypos get such an upper hand of me, that it requires a strong moral principle to pre-
vent me from deliberately stepping into the street, and methodically knocking peo-
ple's hats off – then, I account it high time to get to sea as soon as I can. This is my substi-
tute for pistol and ball. With a philosophical flourish Cato throws himself upon his sword; I quietly take to the ship. There is nothing surpris-
ing in this. If they but knew it, almost all men in their degree, some time or other, cherish very nearly the same feelings towards the ocean with me.

Adobe InDesign CS4

Call me Ishmael. Some years ago – never mind how long pre-
cisely – having little or no mon-
ey in my purse, and nothing particular to interest me on shore, I thought I would sail about a little and see the watery part of the world. It is a way I have of driving off the spleen, and regulating the circulation. Whenever I find myself grow-
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pdf-LaTeX 3.1415926

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Extraído de: http://www.rtznet.nl/zink/latex.php?lang=en

Hyphenation and inter-word spacing statistics

	Word	InDesign	pdf-LaTeX
Number of hyphenations	9	10	4
SD of IWS (pt)	2.26	1.94	1.42
Maximum IWS (pt)	14.4	13.2	9.0
Number of lines with IWS > 9 pt	5	2	0

SD: standard deviation; IWS: inter-word spacing

No. de hifenizações cai para a metade
Inter-espaço > 9pt é nulo

Extraído de: http://www.rtznet.nl/zink/latex.php?lang=en

Variabilidade de altura e de espaço entre digitos

MS Word 0123456789

TeX 0123456789

Myriad, 32pt

Controle da escala de maiúsculas/minúsculas

MS Word AAa BB CC DD

TeX AAa BB CC DD

Garamond Premier Pro, 32pt

Kerning: equilíbrio e proporção no espaçamento das letras

MS Word	Tafel	AVA	*AVA*
TeX	Tafel	AVA	*AVA*

Garamond Premier Pro, 32pt

Exemplos reais

Fragmentos de periódicos reais escritos publicados em periódicos (Ciências Exatas)

Word Only

closer. In this case, we use the following approach to estimating the Z-statistic. In this approach, we can calculate likelihood ratio for each observation i as:

$$LR_i = \log\left[L(R_{COMPi})\right] - \log\left[L(R_{NIi})\right]$$

$$= \frac{1}{2}\log\left(\frac{2\pi}{n}RSS_{NI}\right) - \frac{1}{2}\log\left(\frac{2\pi}{n}RSS_{COMP}\right) + \frac{n}{2RSS_{NI}}\left(e_{NIi}\right)^2 - \frac{n}{2RSS_{COMP}}\left(e_{COMPi}\right)^2$$

Simplifying we can obtain m_i for each observation:

$$m_i = \frac{1}{2}\log\left[\frac{RSS_{NI}}{RSS_{COMP}}\right] + \frac{n}{2}\left[\frac{(e_{NIi})^2}{RSS_{NI}} - \frac{(e_{COMPi})^2}{RSS_{COMP}}\right]$$

which if summed results in the likelihood ratio statistic. The next step is to estimate the standard

Latex

$$[K^e] = [K_0^e] + \mathbf{i}[K_v^e] \tag{13b}$$

$$[K_0^e] = \int_{-1}^{1}\int_{-1}^{1} [\mathscr{B}]^T [\mathscr{D}'] [\mathscr{B}] det(J)\, d\eta\, d\xi$$

$$[K_v^e] = \int_{-1}^{1}\int_{-1}^{1} [\mathscr{B}]^T [\mathscr{D}''] [\mathscr{B}] det(J)\, d\eta\, d\xi \tag{13c}$$

ρ is the volumic density and J the Jacobian and *det* represent the determinant.

K_0^e: Real part represents the elastic stiffness.

Word Only

[4] studied the semigroups of order – preserving and order – preserving of a finite set $X_n = \{1,2,3,\cdots\}$. A map $\alpha: X \longrightarrow X_n^*$ is called order – decreasing, D_n of all $i\ in\ X, i\alpha \leq i$. The semigroups of all order – decreasing maps is of cardinality $n!$. A general study of D_n was initiated by [17]. A mapping is called order – preserving if for all $i, j\ in\ \{1,2,3,\cdots\},\ i \leq j \Longrightarrow i\alpha \leq \alpha j$ where $i\alpha, \alpha j \in dom(\alpha)$. The semigroup of order – preserving full transformation of X_n will be denoted by O_n. [4] showed that the order of $|\,O_n| = \binom{2n-1}{n-1}$

Latex

$$\sum_{i\in I^d} \alpha'_i > 0 \quad if \quad I^d = I.$$

Proof. By Lemma 1, if Y is bounded on $P_>$, then generators of $P_\geq$ cannot have unbounded yield. yield does not change the yield. Hence

$$Y(x) = Y(x^d)$$

with

$$x^d = \sum_{i\in I^d} \alpha_i v^i + \sum_{j\in J^d} \beta_j u^j \in P_>.$$

Now, consider

$$x' = \lambda x^d = \sum_{i\in I^d} (\lambda\alpha_i)\, v^i + \sum_{j\in J^d} (\lambda\beta_j)\, u^j \in D$$

Excerto do Author's Guide (Elsevier)

Preparation

Use of word processing software

It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

LaTeX

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Exemplos pessoais

Pôster

Gaussian field control and local upscaling for sandstone reservoir modelling using MRST

Authors: Lucas C. Silva[1];Gustavo P. Oliveira [2]

Introduction

Reservoir modelling is useful in oil industry for many reasons, such as predict decline rates, optimize production, improve well placement strategies and, above all, fully characterize the subsurface [1],[2]. In this account, mathematical models are invaluable during all the stages of reservoir characterization, as with for the spatial distribution of properties over the reservoir through geostatistical techniques.

Motivation

- Understand the fluid flow through porous media
- Study the permeability behavior
- Generate synthetic models and properties

Objective

The purpose of this work is to compare spatial distributions of porosity and permeability in petroleum reservoir models through Gaussian fields and upscaling techniques. Both procedures are carried out by numerical prototyping using the free open-source tool MRST (*Matlab Reservoir Simulation Toolbox*) [3] and applied to build primary synthetic models similar

Results

Porosity profiles, 3D realizations of horizontal permeability spread over a original fine grid) model, as well as Gaussian kernels from different apertu below.

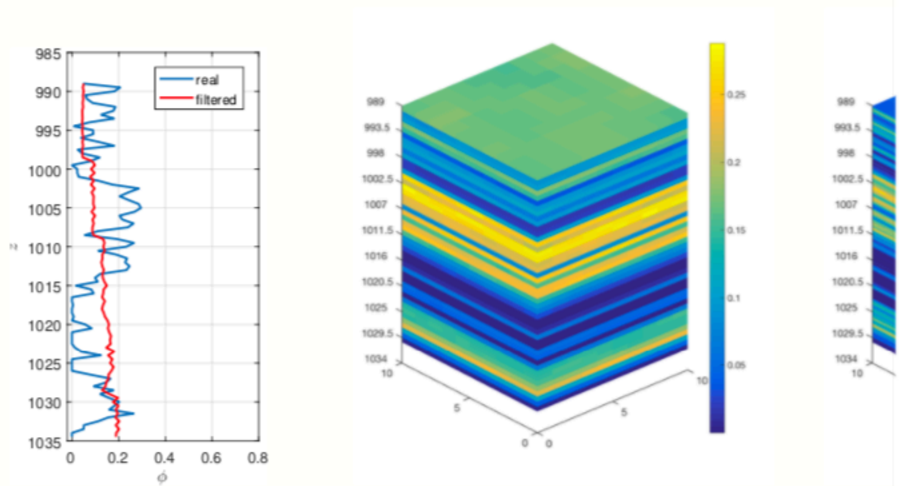
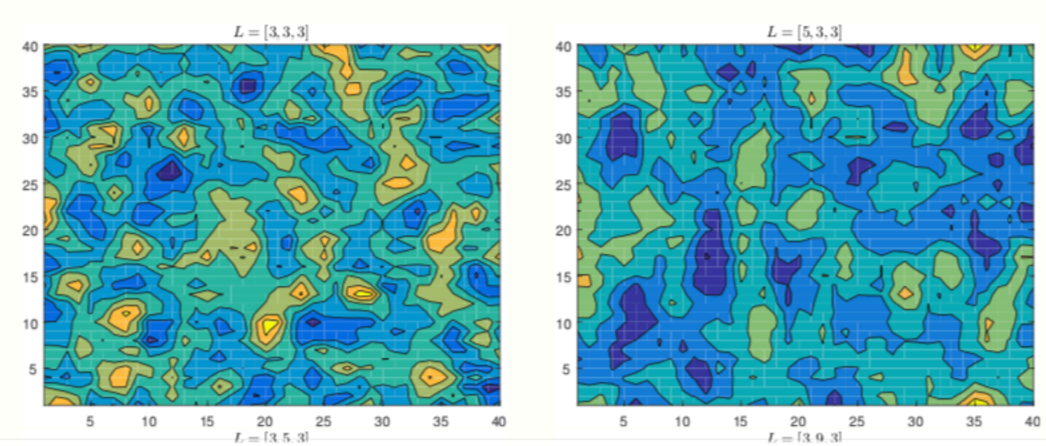


Figure 1: Porosity profiles: real x filtered; synthetic models: 4



Memorial

Memorial Acadêmico

Career Portfolio

Histórico profissional destinado a concursos e/ou exames de seleção para o cumprimento de requisitos de avaliação.

Professional history intended to applications, examinations and tenure competitions for jury assessment.

Tese

by $\sqrt{g_{ref}D_{ref}}$. Thenceforth,

$$p^* = -\left(\frac{\beta_{ref}}{\rho^2 g_{ref}}\right)\left(\frac{L_P}{D_b}\right)(\mathbf{x}^* \cdot \mathbf{e}^*) + \tilde{p}^* \tag{6.9}$$

gives the dimensionless form (the asterisk was dropped out)

$$p = -\lambda Eu_\beta(\mathbf{x} \cdot \mathbf{e}) + \tilde{p}, \tag{6.10}$$

with

$$Eu_\beta = \frac{\beta_0}{\rho^2 g_{ref}}, \lambda = \frac{L_P}{D_b}. \tag{6.11}$$

Since ρ_{ref} is taken to be the liquid density ρ^2 , Eu_β can be interpreted this time as the ratio of the upward body force to the gravitational force, which acts to balance the liquid mass contained in the periodic cell. Consequently, at steady state, $Eu_\beta \approx \mathcal{O}(\rho^2 \mathbf{g} \cdot \mathbf{e}) \approx 1$.

Carta de apresentação (cover letter)

FEDERAL UNIVERSITY
OF PARAÍBA

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E-mail: gustavo.oliveira@ci.ufpb.br

May 28, 2019

To: Journal of Petroleum Science and Engineering

Subject: paper submission.

Dear Editor-in-Chief:

On behalf of the co-authors, I would like to bring to your consideration our paper entitled

Artigo (papers)

.cls Elsevier

2. Background information

In this section we introduce a brief overview on artificial and convolutional neural networks, as well as on statistical measures used to evaluate the quality of learning of a neural network.

2.1. Multi-layer perceptron networks

Multi-layer perceptron neural networks (MLPs) are computational techniques used supervised learning whose mathematical model is inspired in neural structures of intelligent organisms that acquire knowledge from experience. Usually, the human brain is the preferred mold

and image processing (LeCun et al., 2015). In oil and gas sector, CNNs are succeeding in performance and suitability to cope with seismic imaging (Waldeland et al., 2018). Fig. 2 depicts a generic architecture for a CNN.

CNNs process the information through a multilayer architecture formed by input, hidden (intermediary) and output layers. Their main function is to receive the input data, usually images stored into multidimensional arrays, and apply convolutional filters alternately to generate a variety of features that allows us to describe the input images as accurately as one wishes. Next, conventional MLPs perform the classification by gathering the smaller pieces of information available about the whole input data. CNNs can also couple encoders and decoders. Encoders are networks that take the input data and output a feature

.cls Wiley antiga

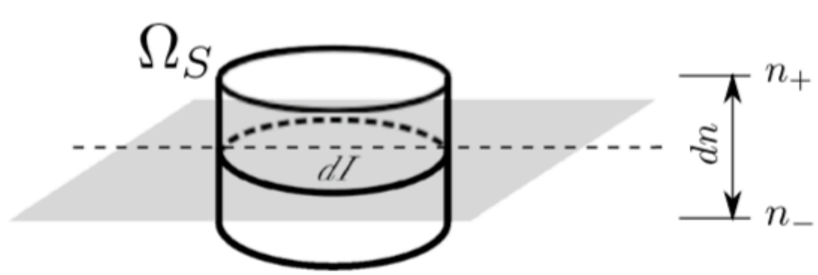

Fig. 2 Small volume Ω_S crossing the interface surface

Since ρ_0 is taken to be the liquid density ρ^2, $Eu_{\beta*}$ can be interpreted as the ratio of the upward body force to the gravitational force, which acts to balance the liquid mass contained in the periodic cell.

2.3 Finite element procedures

This section describes concisely the fundamental steps behind the finite element method used here by exposing the procedures of discretization, variational formulation and solution of the resulting system of equations.

2.3.1 Domain discretization

Given a tessellation $\mathcal{T}_h$ of Ω, each simplex $T \in \mathcal{T}_h$ here either is a triangle (in 2D), or a tetrahedron (in 3D) with vertices $\mathbf{x}_j$, $2 \leq j \leq 3, 4$, obeying the classical requirements for a finite element space [26]. Rich definitions as to dis-

Artigo (papers)

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where $\boldsymbol{\alpha} \approx \int_{t^n}^{t^{n+1}} \mathbf{u}(\mathbf{X}(\mathbf{x},\tau))\,d\tau$ turns into a displacement vector. Several schemes to compute $\boldsymbol{\alpha}$ are known in literature, from first-order integrations to high-order time-splitting schemes. A few examples are[3] and[20]). Later on, we will discuss the new scheme proposed here.

That said, we can handle the material derivative appearing in Eq. (4a) as

$$\frac{D\varphi}{D\tau} = \frac{\partial\varphi}{\partial\tau} + \mathbf{c}\cdot\nabla\varphi \approx \frac{\varphi(\mathbf{x}_a, t^{n+1}) - \varphi(\mathbf{x}_d, t^n)}{\Delta t}, \tag{9}$$

where $\Delta t = t^{n+1} - t^n$ is now the time step. This way, the spatial gradient of any fluid variable φ is suppressed, meaning that both the temporal and convective rates of change occur instantaneously in a combined effect. Because perfect matches of departure points and mesh nodes are implausible, the value of $\varphi(\mathbf{x}_d, t^n)$ should be computed employing interpolation. That is

Enfim, convencido(a)?!

🕶️

Baseado no artigo "The beauty of LaTeX", D. Taraborelli
Disponível aqui: http://nitens.org/taraborelli/latex