



# **Cadastro 3D: uma nova perspectiva da cidade para o avaliador de imóveis**

**Diego Alfonso Erba**

Floriaopolis, SC 16 a18 de outubro de 2013

## **“3D, or not 3D, that is the question...”**

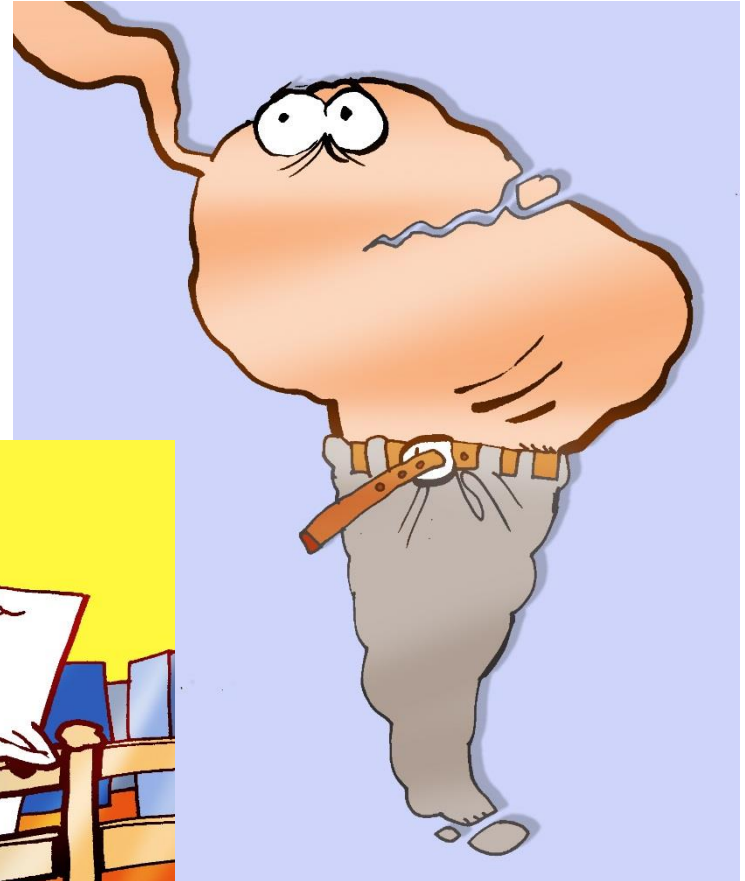
- América Latina é uma região diversificada. É a região mais desigual do mundo.
- A concentração de propriedade e de recursos, bem como o alto valor da terra urbana, leva a usos ilegais e informais do solo.
- Esta situação é um produto das políticas territoriais excludentes e, em parte, a existência de cadastros 2D incompletos e inadequados.

# **“3D, or not 3D, that is the question...”**

Se a realidade dos cadastros da América Latina é complexa e, em muitos casos, precária em 2D, a ideia de desenvolver um cadastro 3D parece ser uma utopia ...

# **“3D, or not 3D, that is the question...”**

A implementação de um cadastro 3D, pode reduzir a concentração da propriedade, melhorar o uso dos recursos naturais e diminuir a informalidade ao longo da região?



Hemetério Cardozo

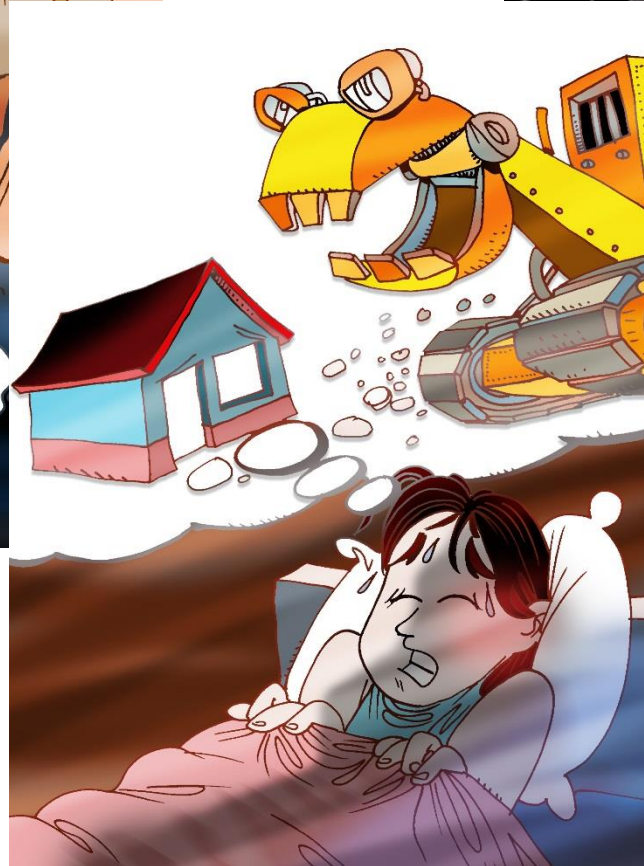
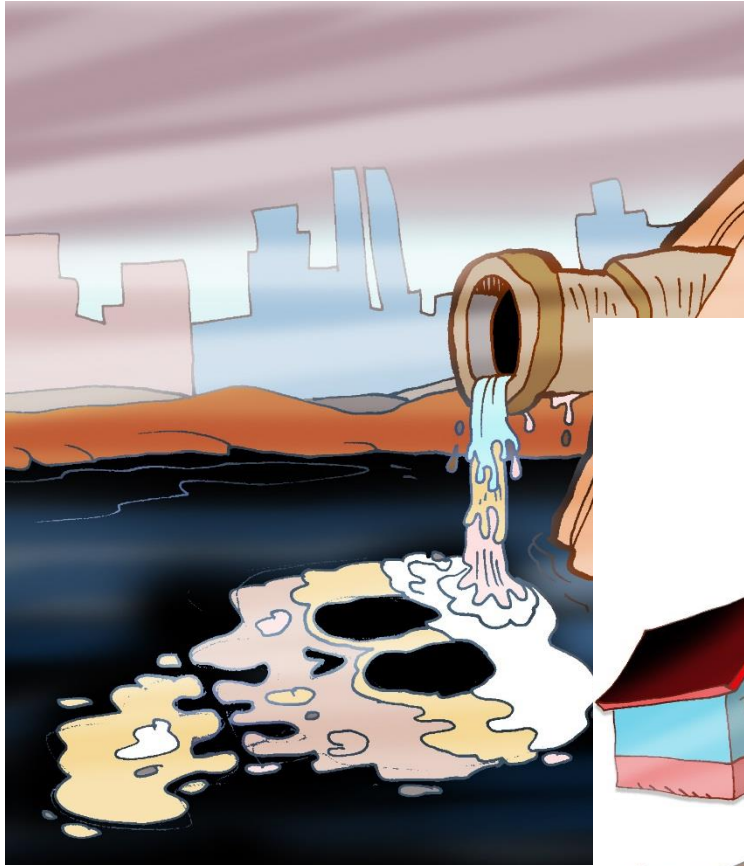


**Hemetério Cardozo**



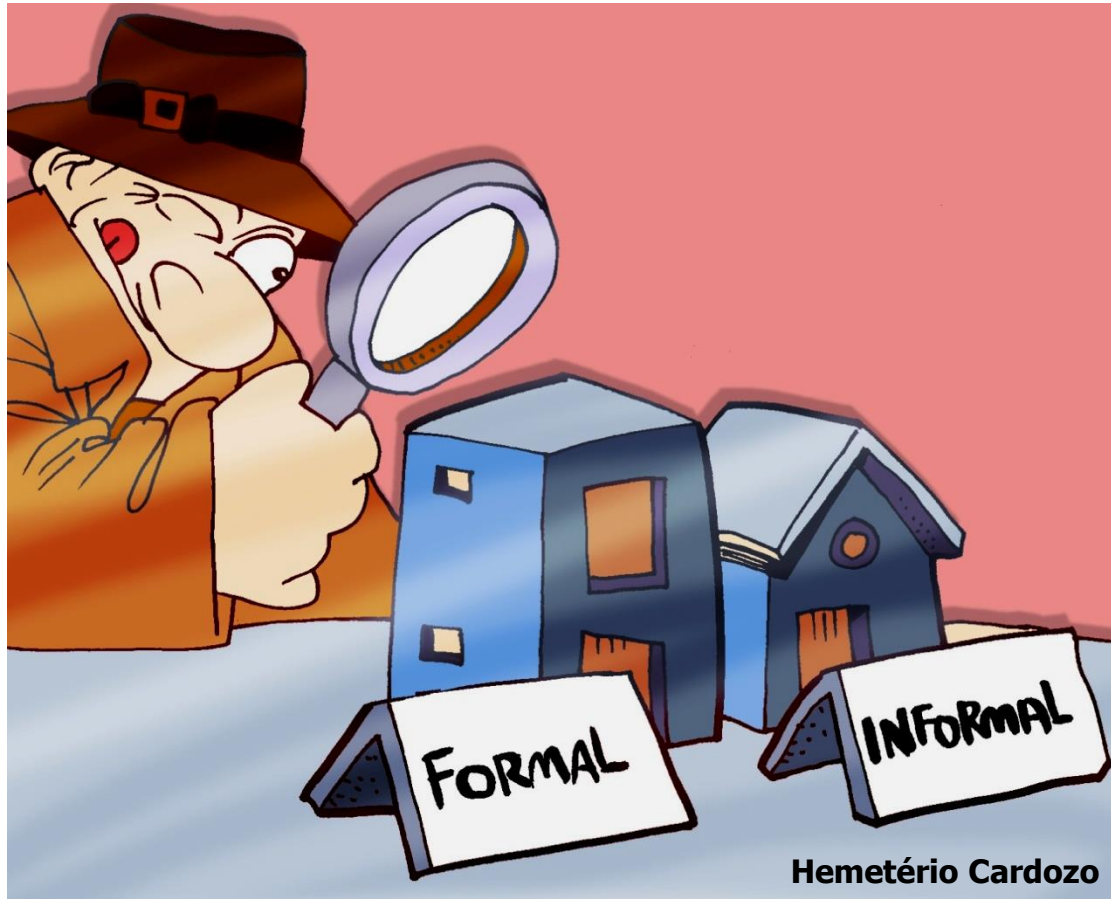


**Hemetério Cardozo**



**Hemetério Cardozo**







Fonte: <http://smge-mexico.blogspot.com.ar/2011/10/mapas-y-planos-antiguos-de-la-ciudad-de.html>

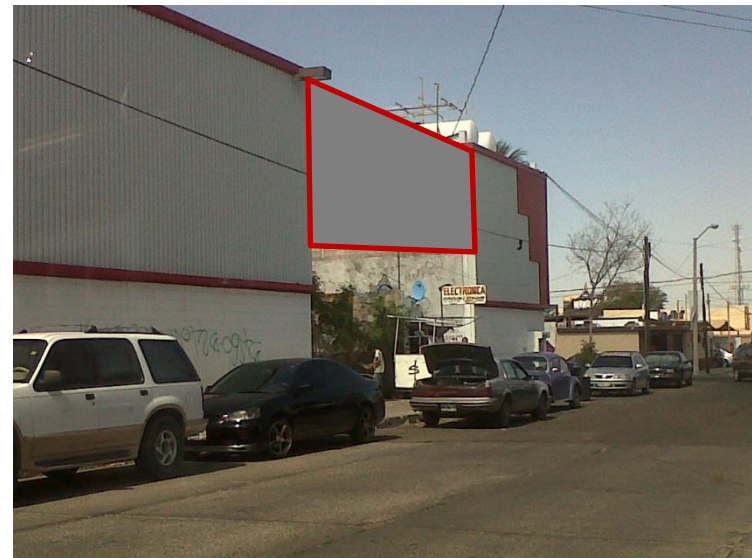
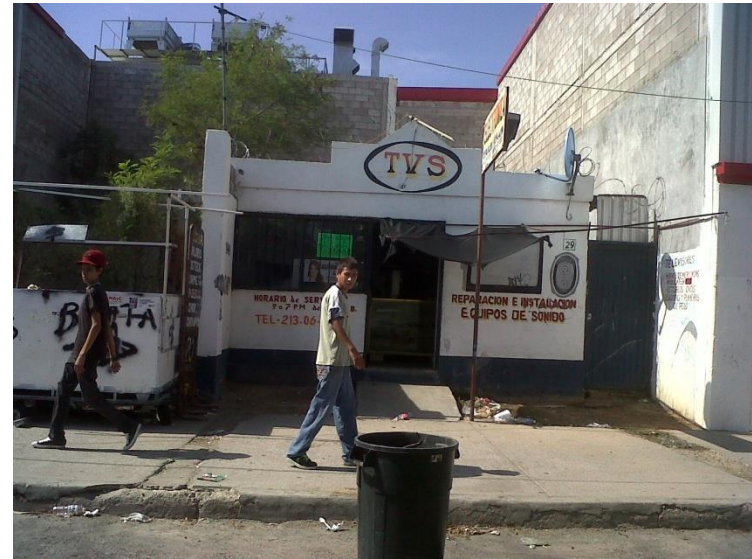


## Caracas, Venezuela



Martim Smolka

## Hermosillo, México





## Córdoba, Argentina



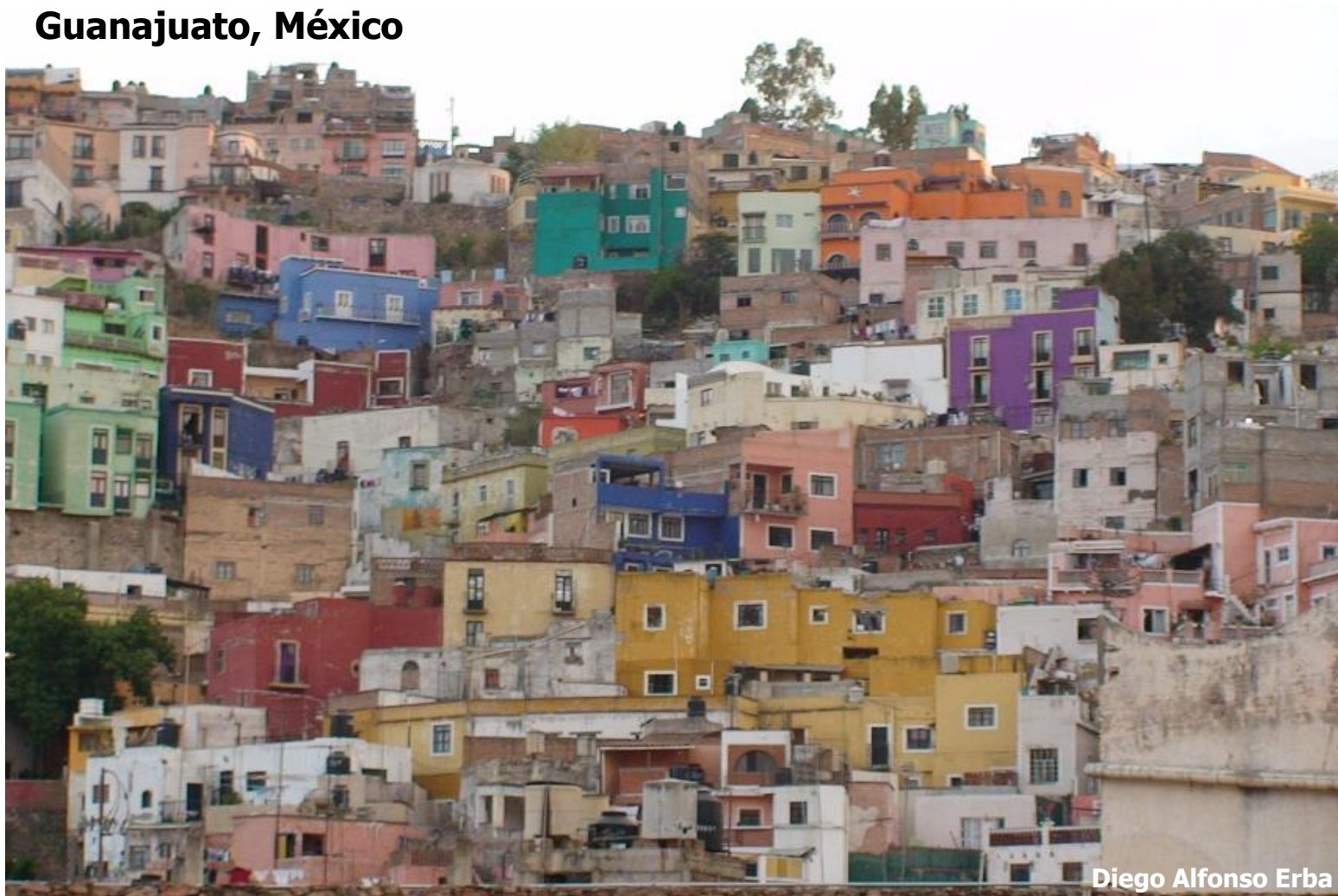


## Puyo, Ecuador



Diego Alfonso Erba

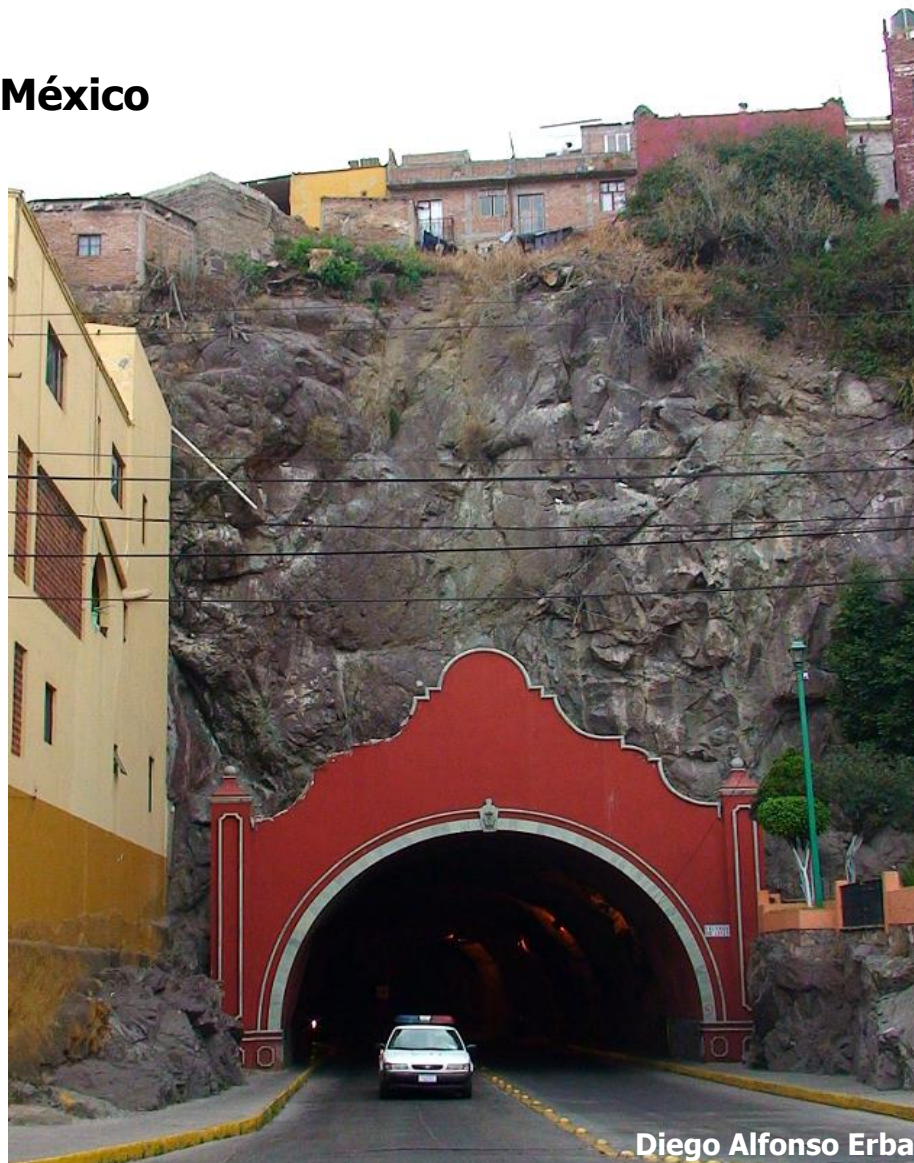
## Guanajuato, México



Diego Alfonso Erba



## Guanajuato, México



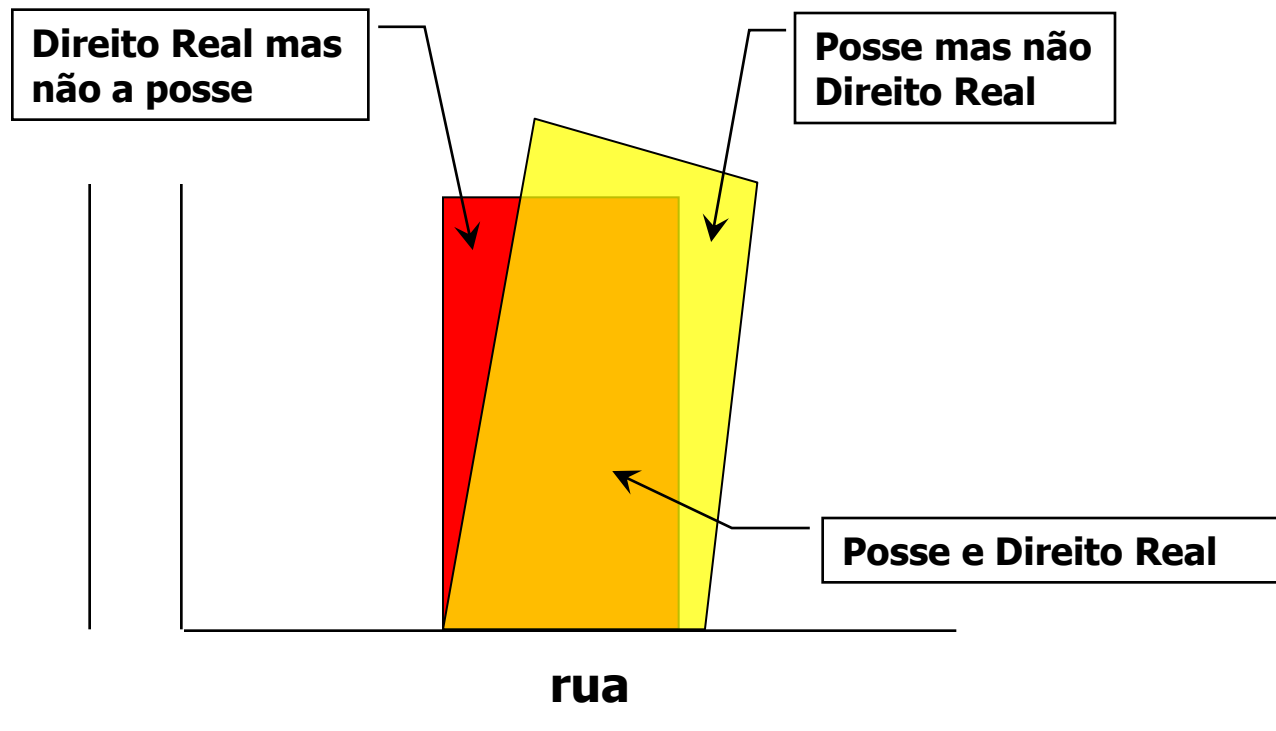
Diego Alfonso Erba

## Rotterdam, Holanda



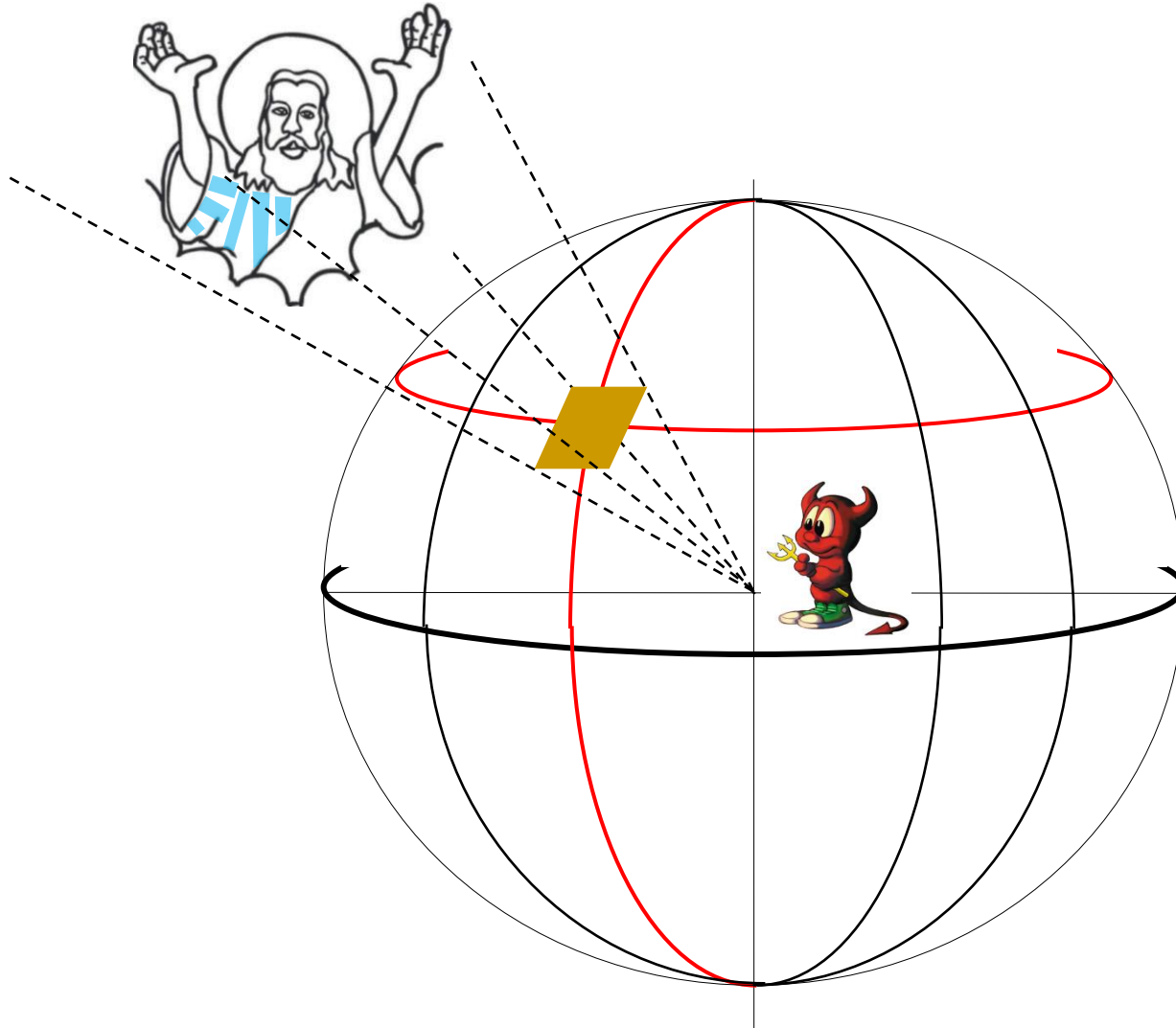
Diego Alfonso Erba

# A propriedade e a posse

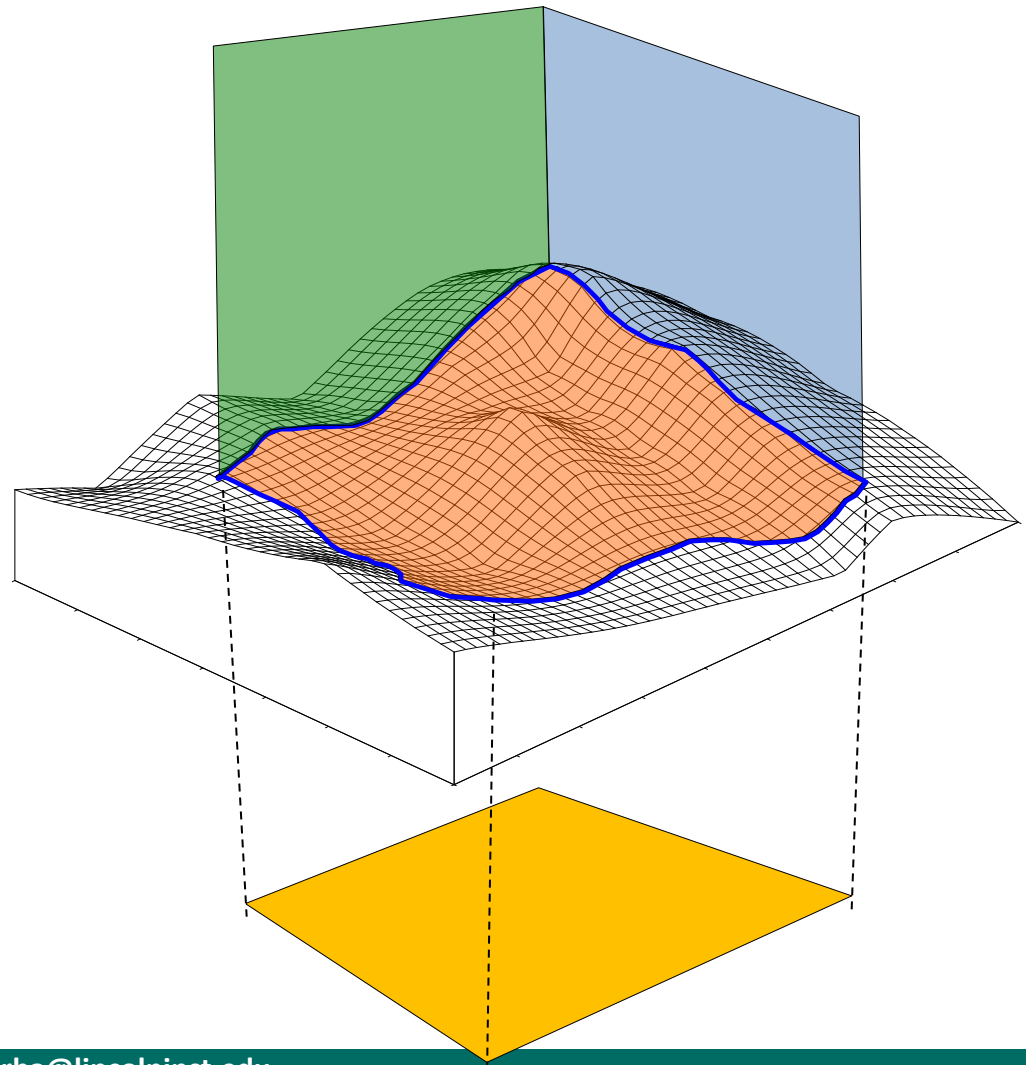
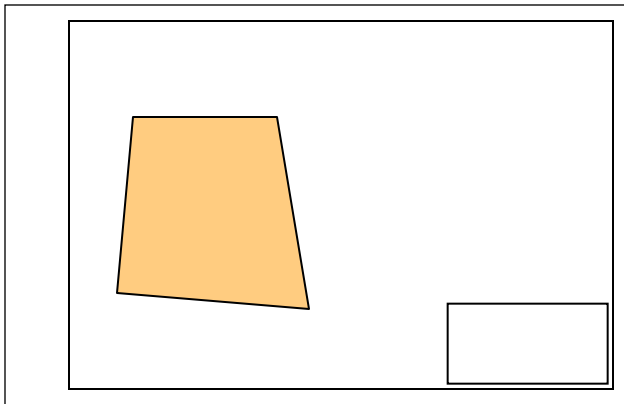




# A propriedade no espaço



# A propriedade no espaço



# O cadastro 3D

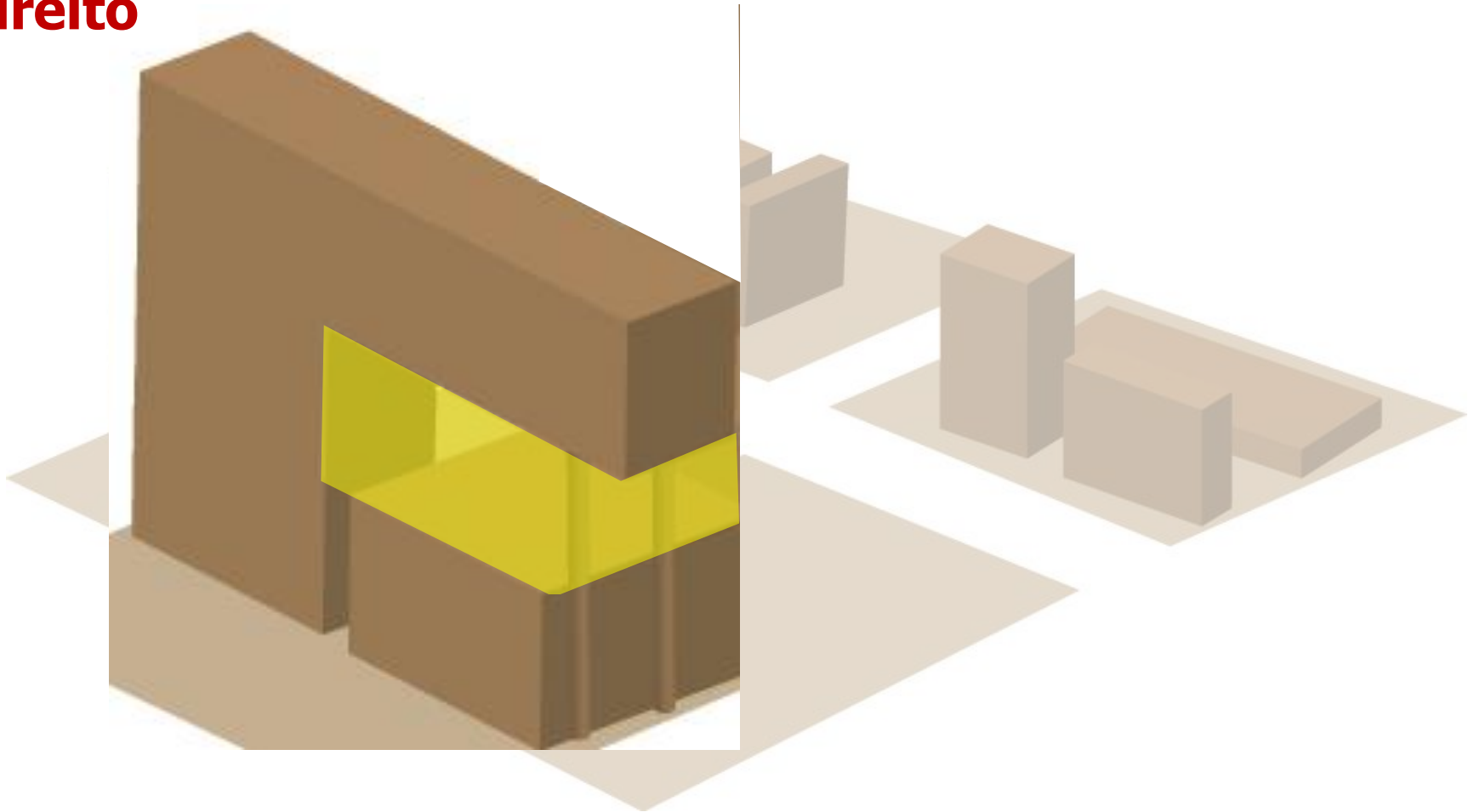
**Direito**



Diego Alfonso Erba

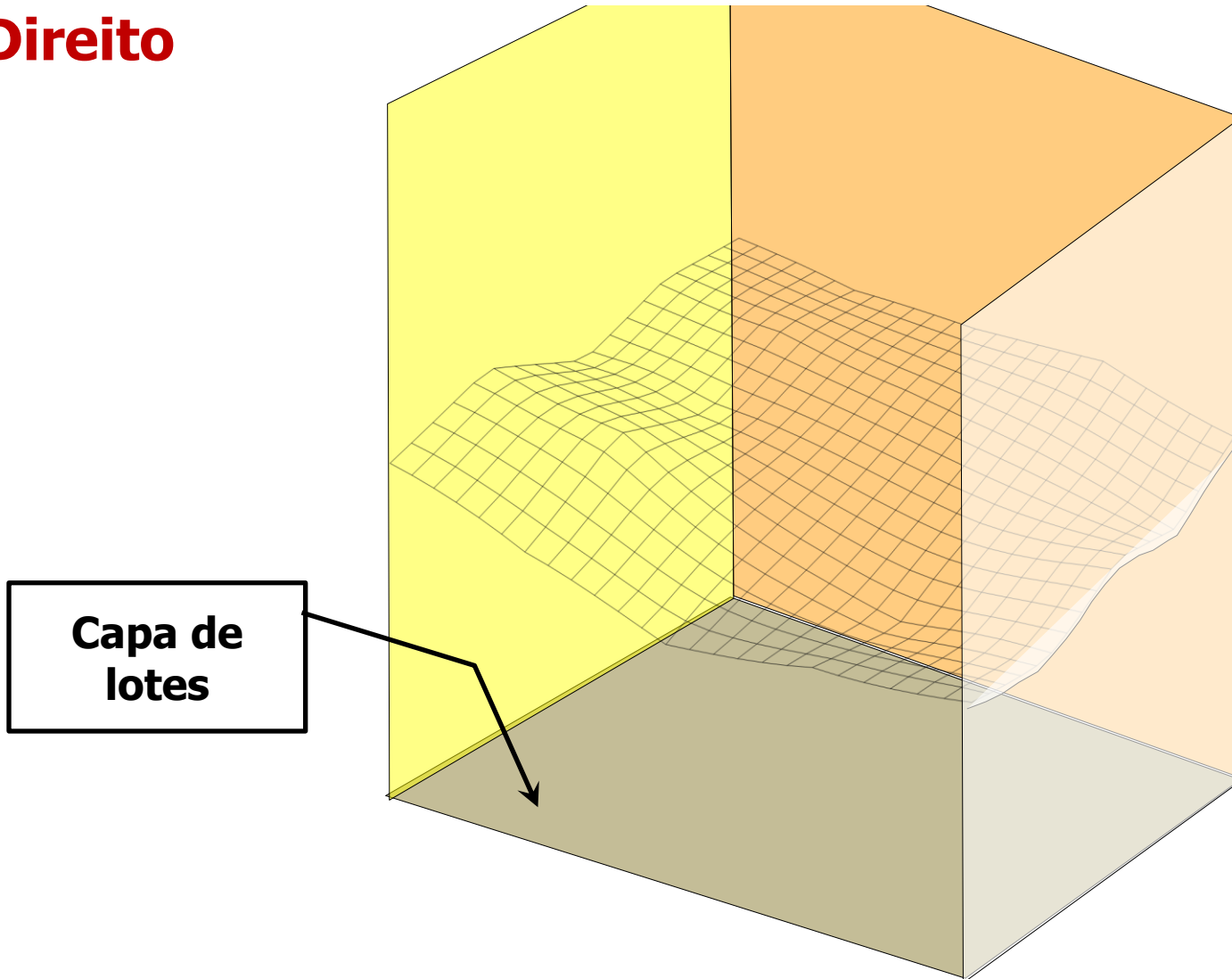
# O cadastro 3D

**Direito**



# O cadastro 3D

Direito

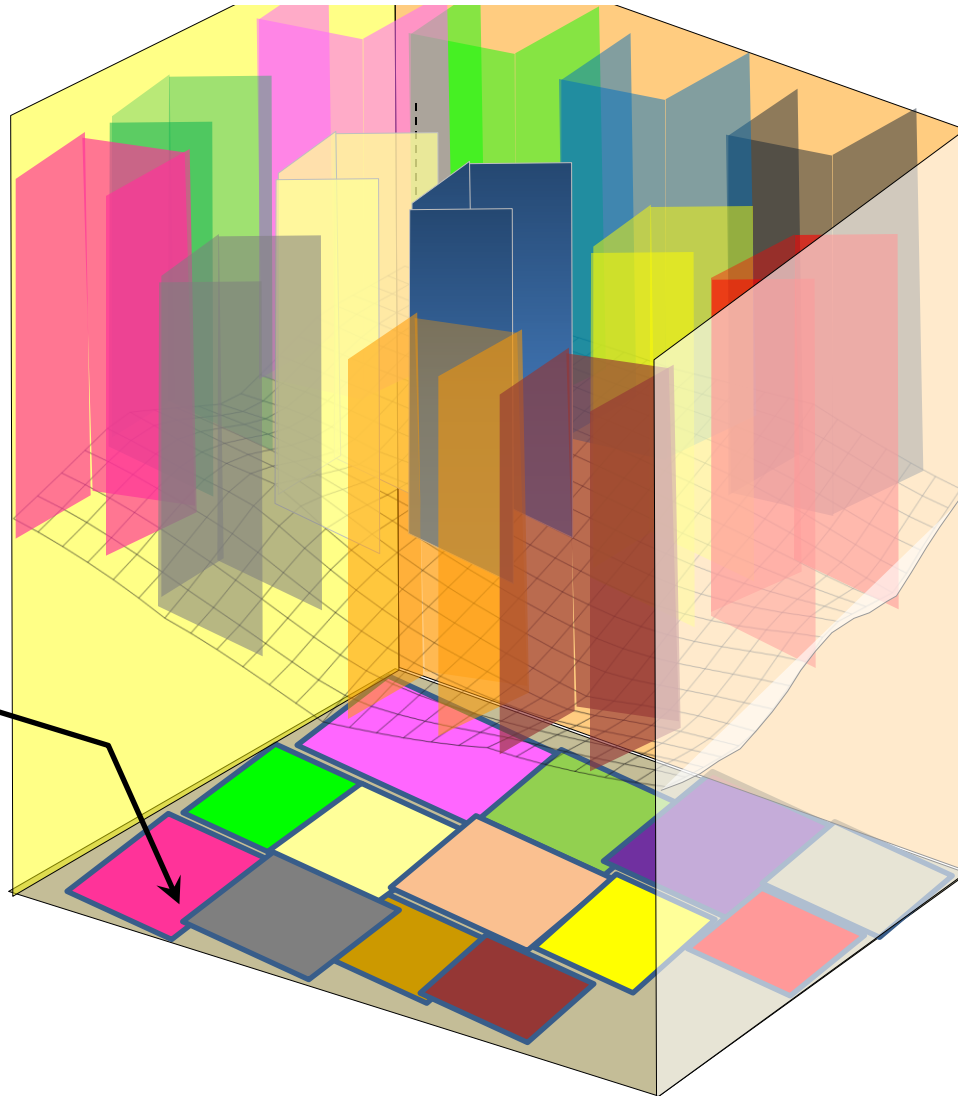




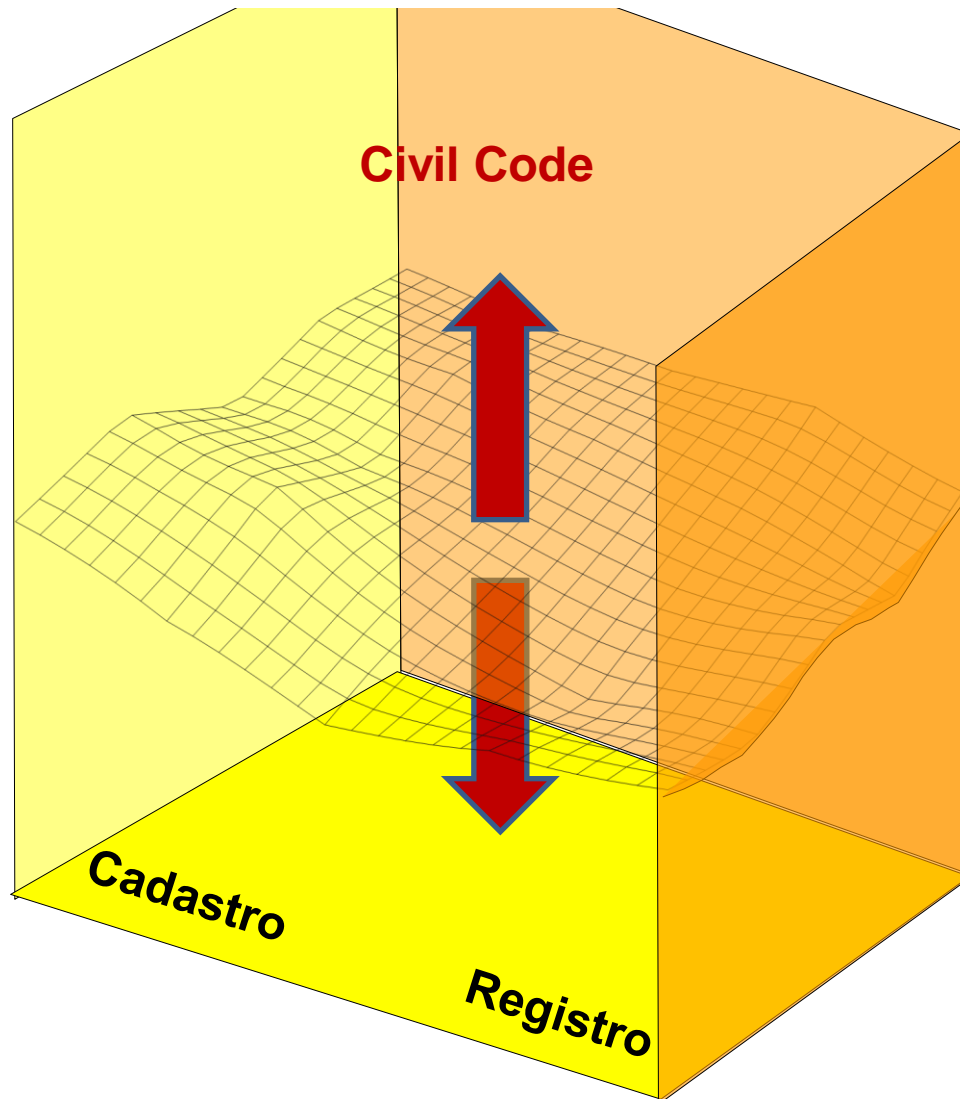
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Direito

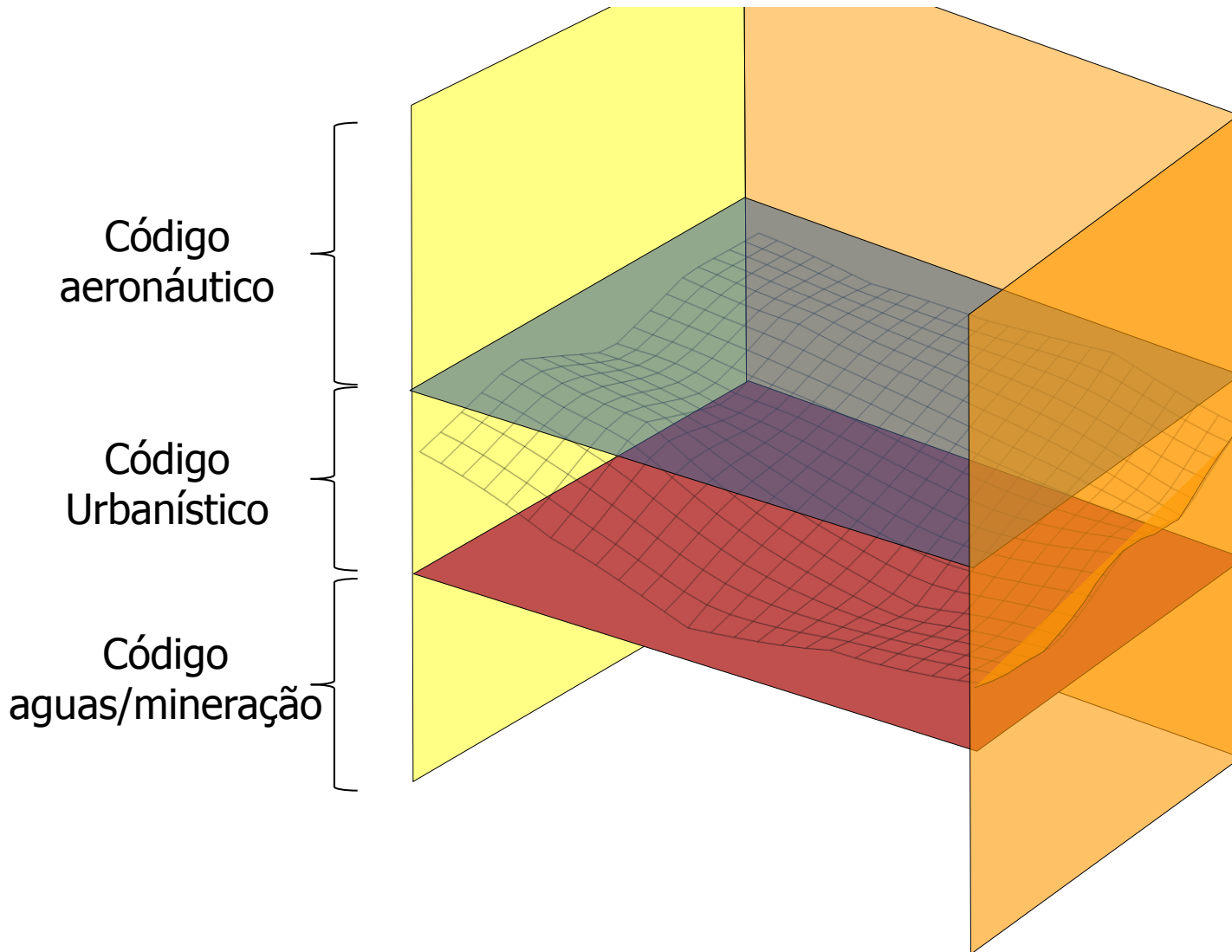
Capa de lotes



# O cadastro 3D

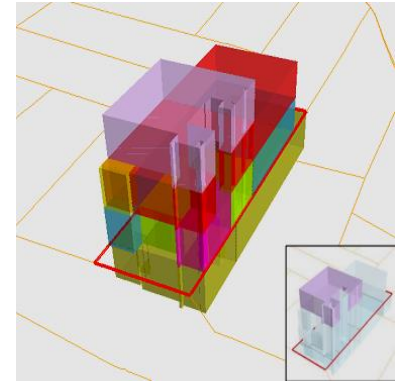
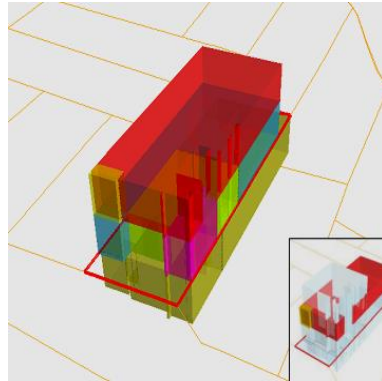
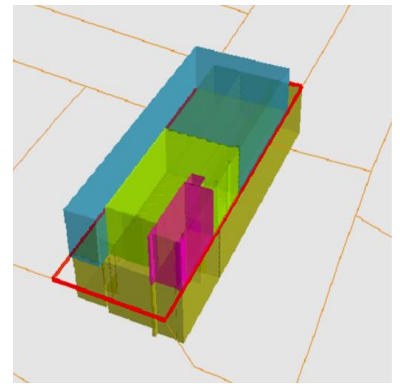
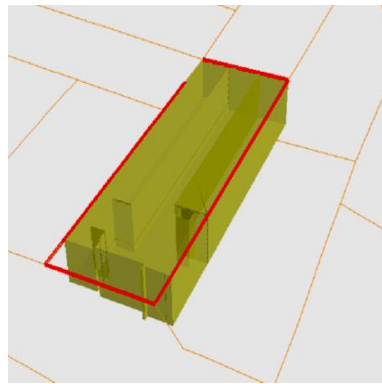


# O cadastro 3D



# O cadastro 3D

## Formalidade



Sub-Department of Cadastre of the Municipality of Medellin, Colombia

# O cadastro 3D

## Informalidade





# O cadastro 3D

## Informalidade





# O cadastro 3D

## Informalidade

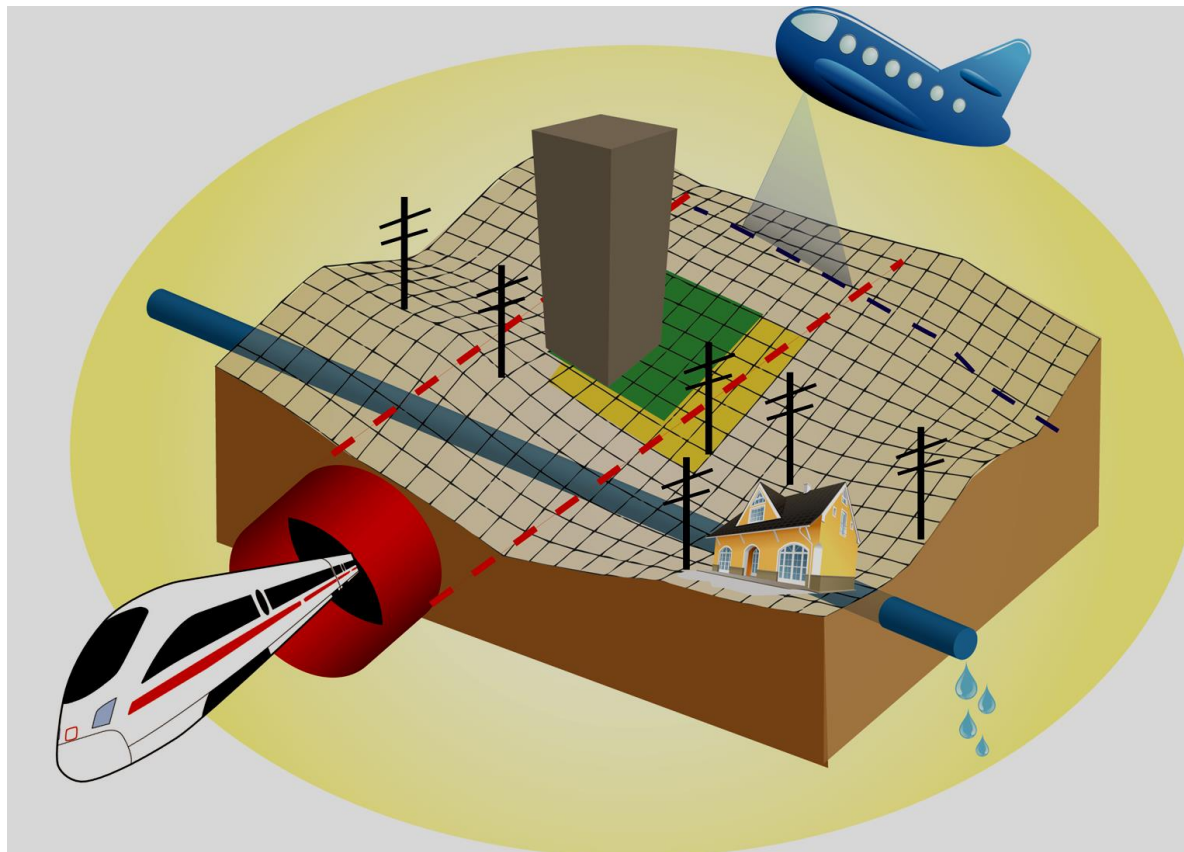


Osasco, SP, Brasil

Viviane Manzione Rubio

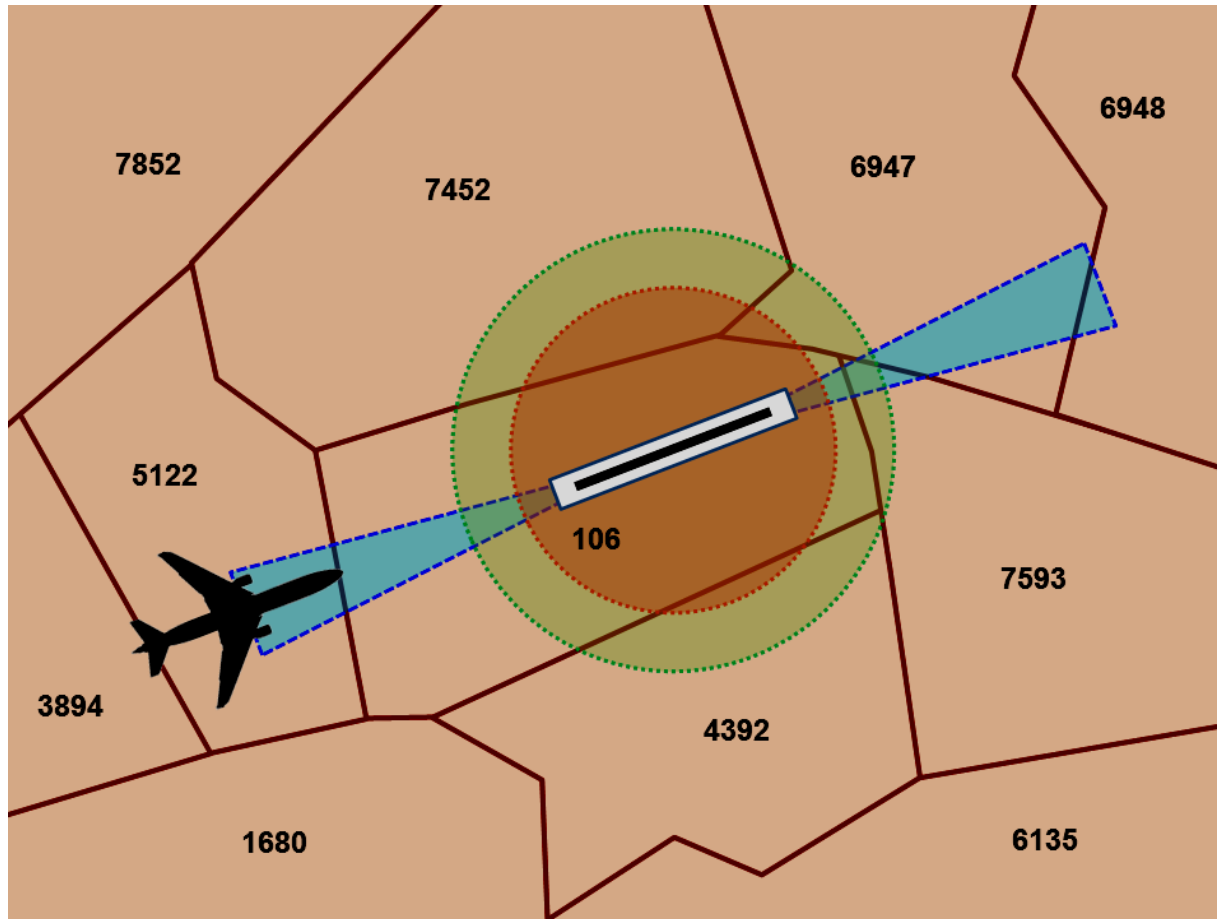
# O cadastro 3D

## Infraestrutura



# O cadastro 3D

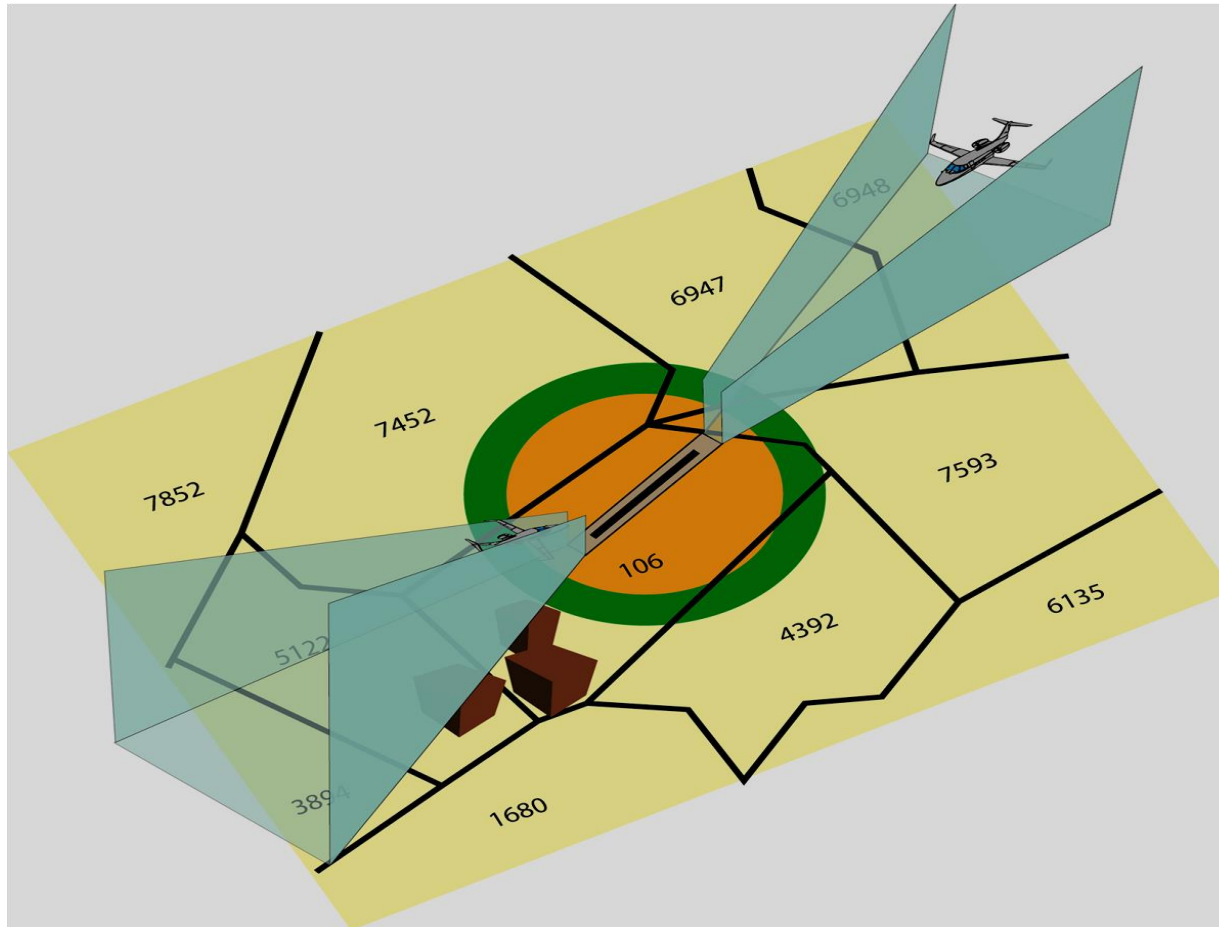
## Infraestrutura





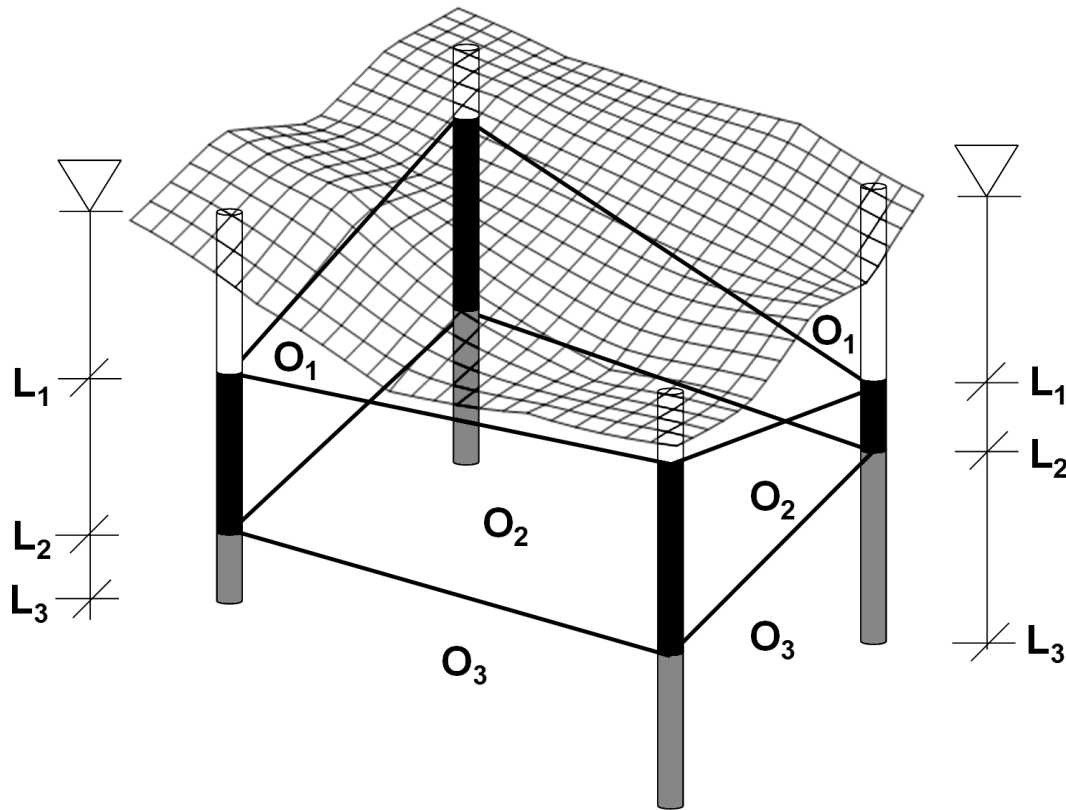
# O cadastro 3D

## Infraestrutura



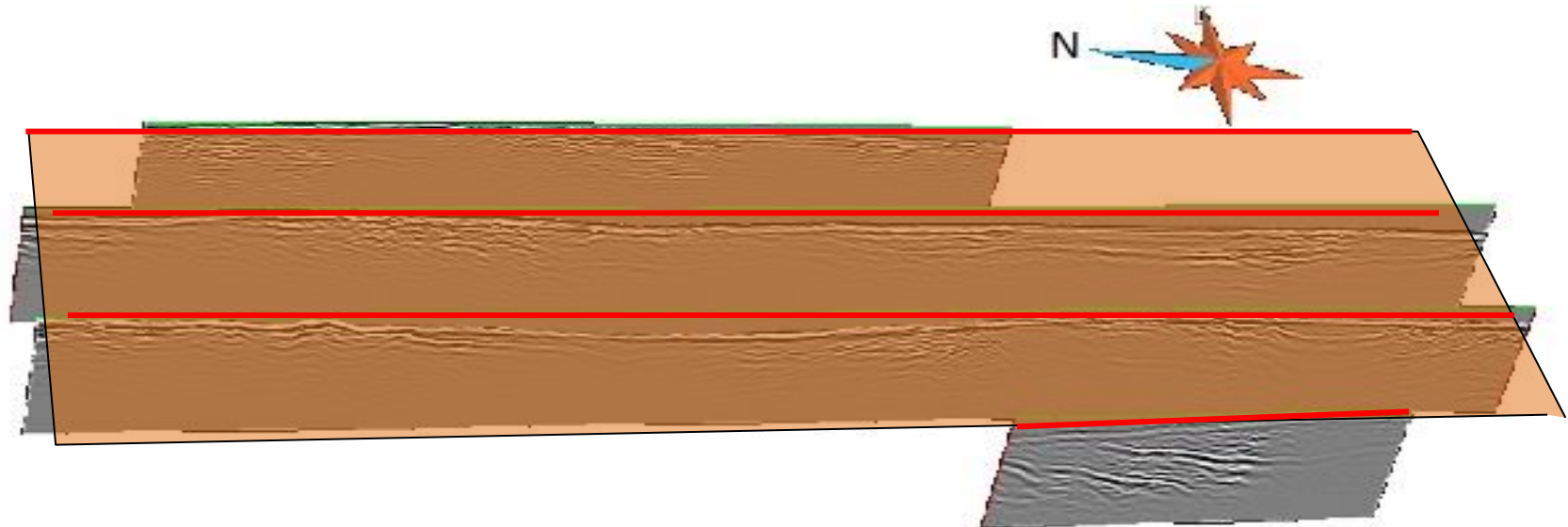
# O cadastro 3D

## Subsolo



# O cadastro 3D

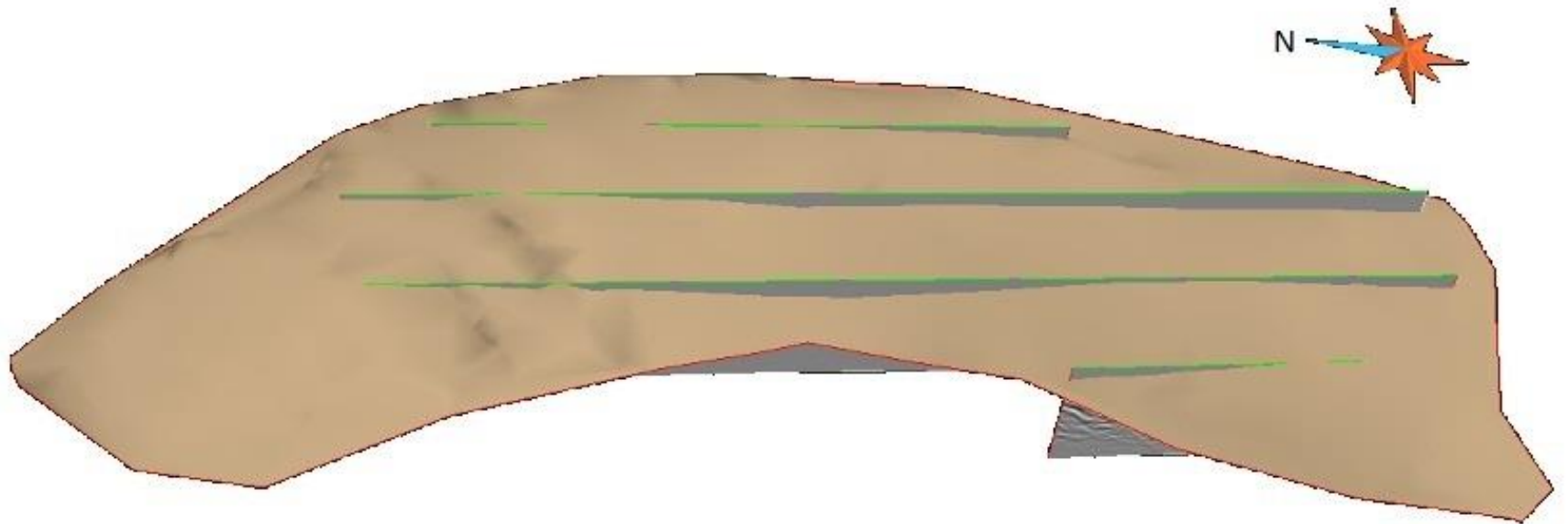
## Subsolo





# O cadastro 3D

## Subsolo



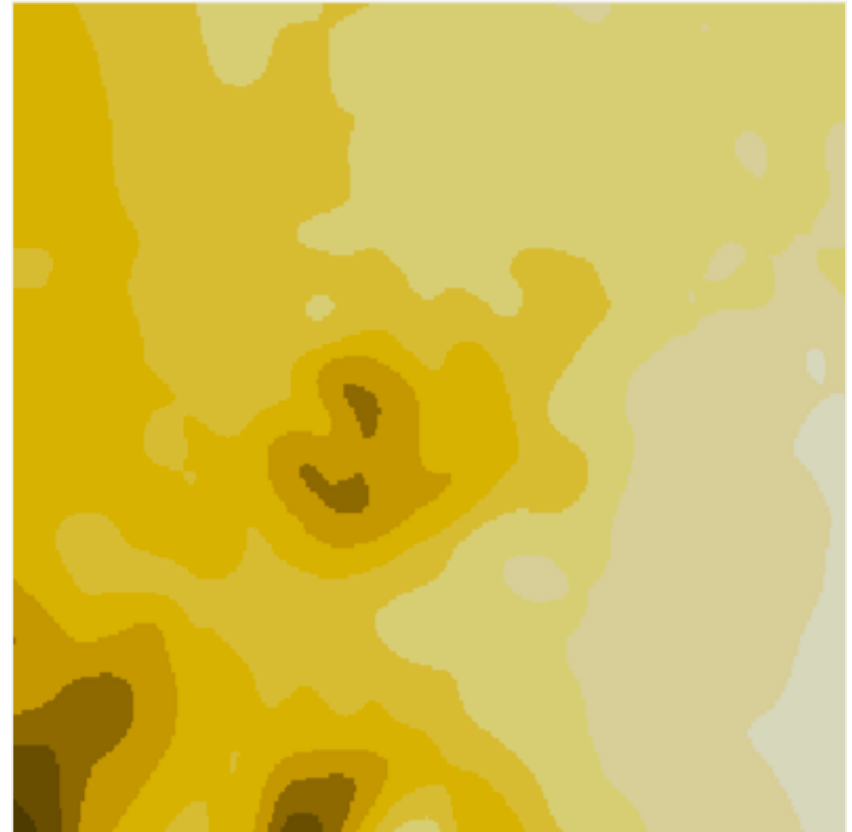
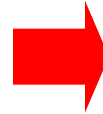
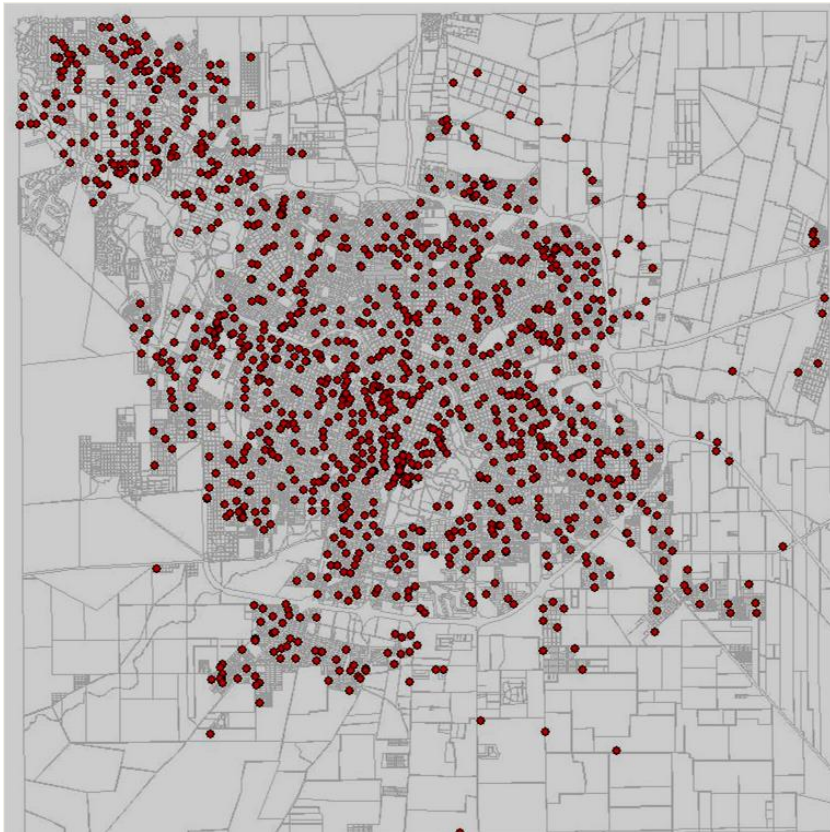
Silva, Reginaldo Macedônio. 2012

# Geometrias não são Geografias

**Milton Santos**

# O cadastro 3D

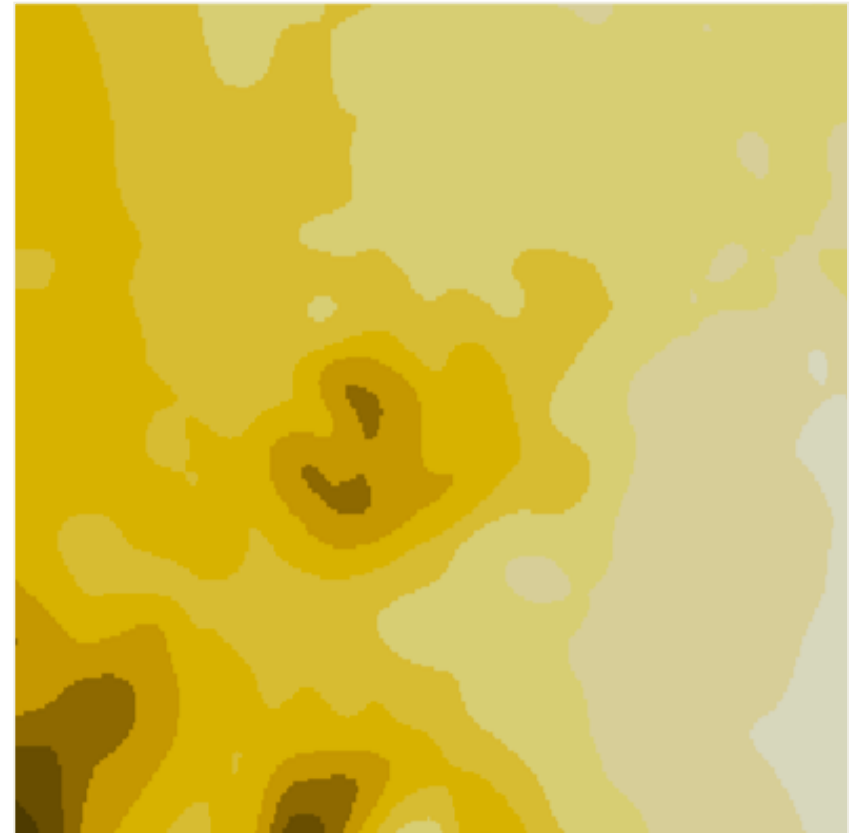
## Economia



Mario Piumetto, Córdoba, Argentina

# 0 catastro 3D

## Economía

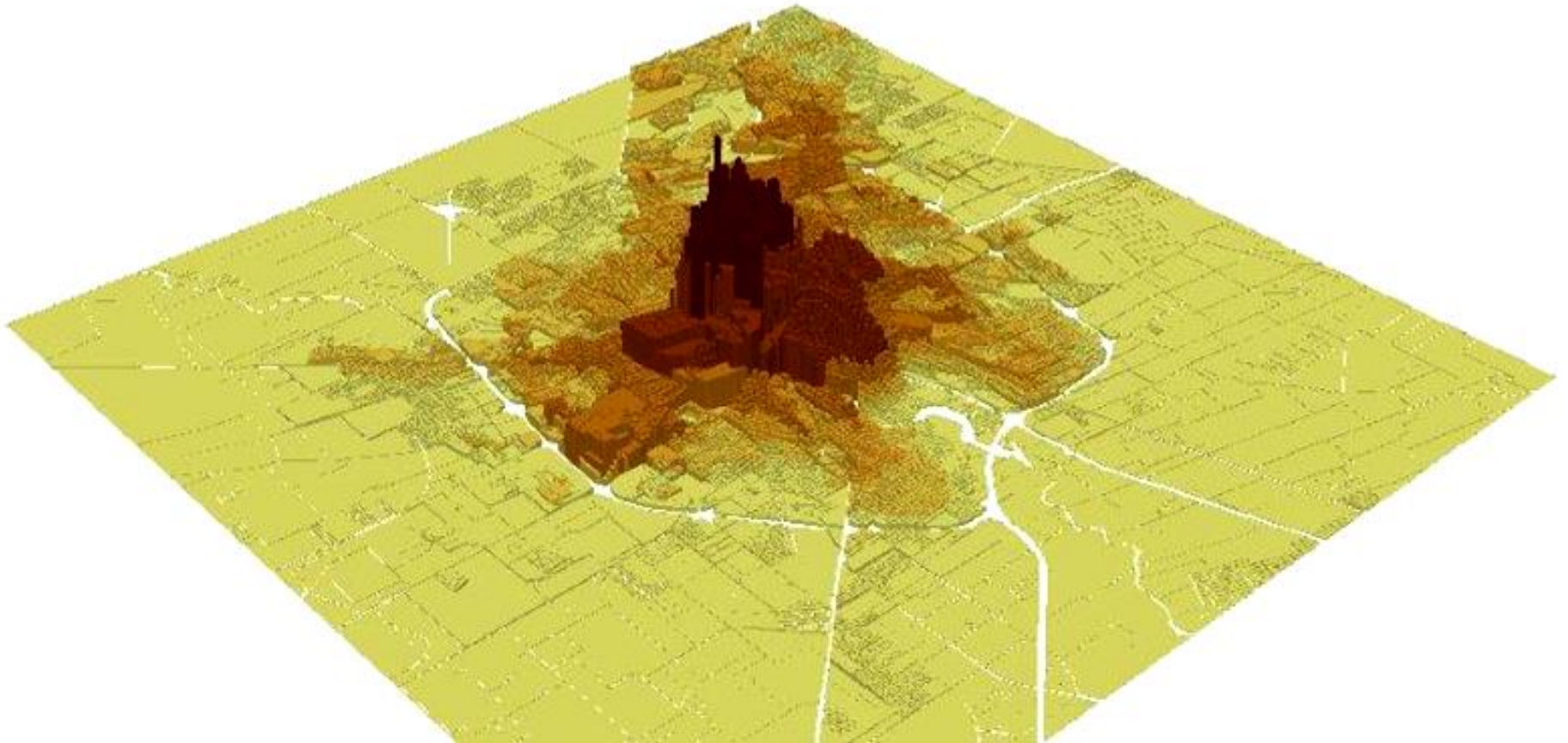


Mario Piumetto, Córdoba, Argentina



# O cadastro 3D

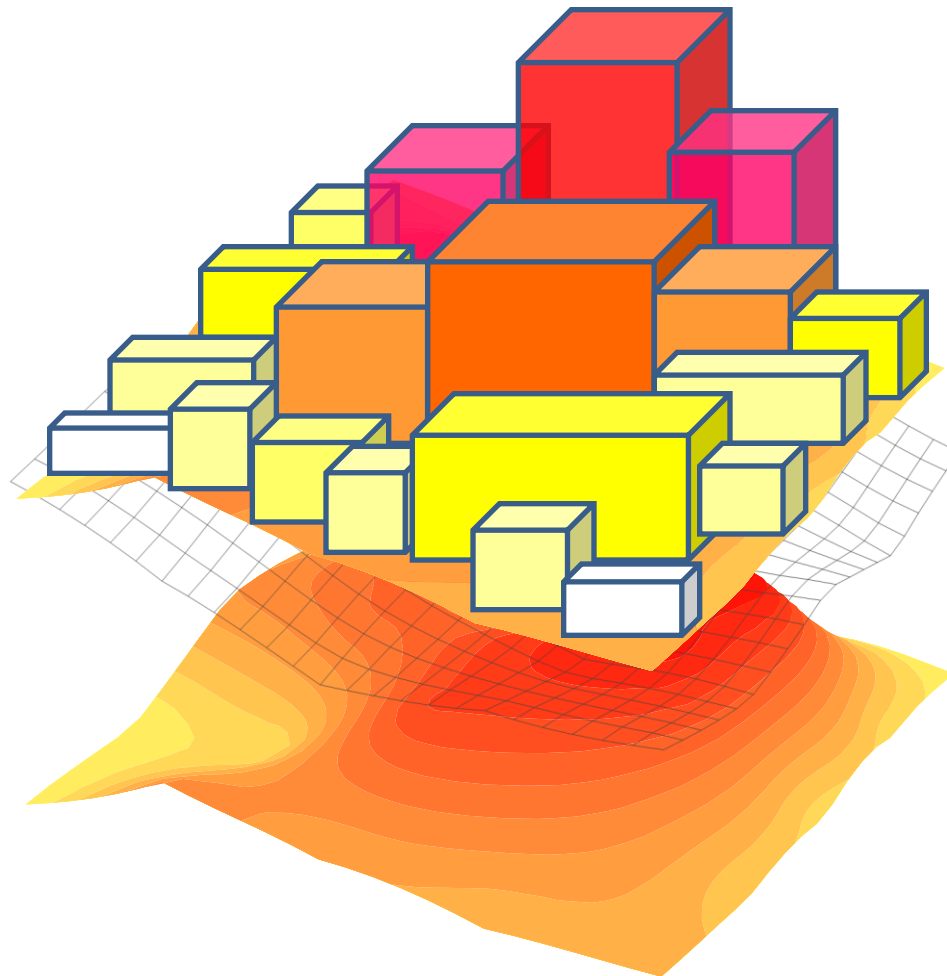
**Economia**



Mario Piumetto, Córdoba, Argentina

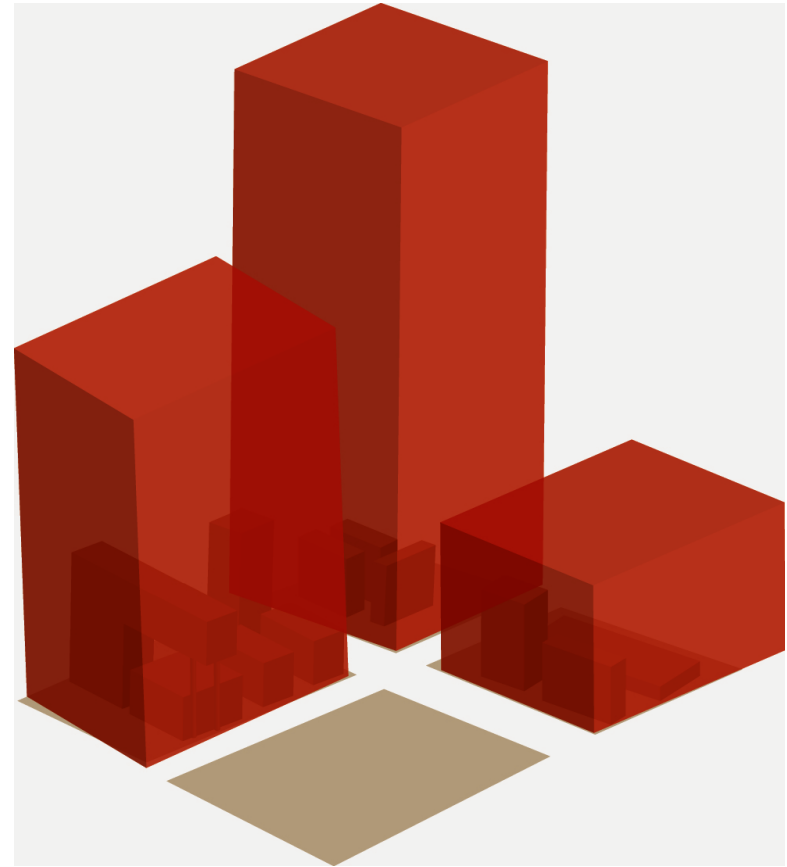
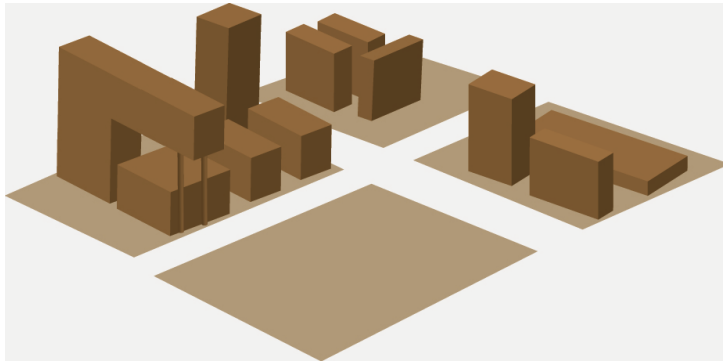
# O cadastro 3D

**Economia**



# O cadastro 3D

## Economia



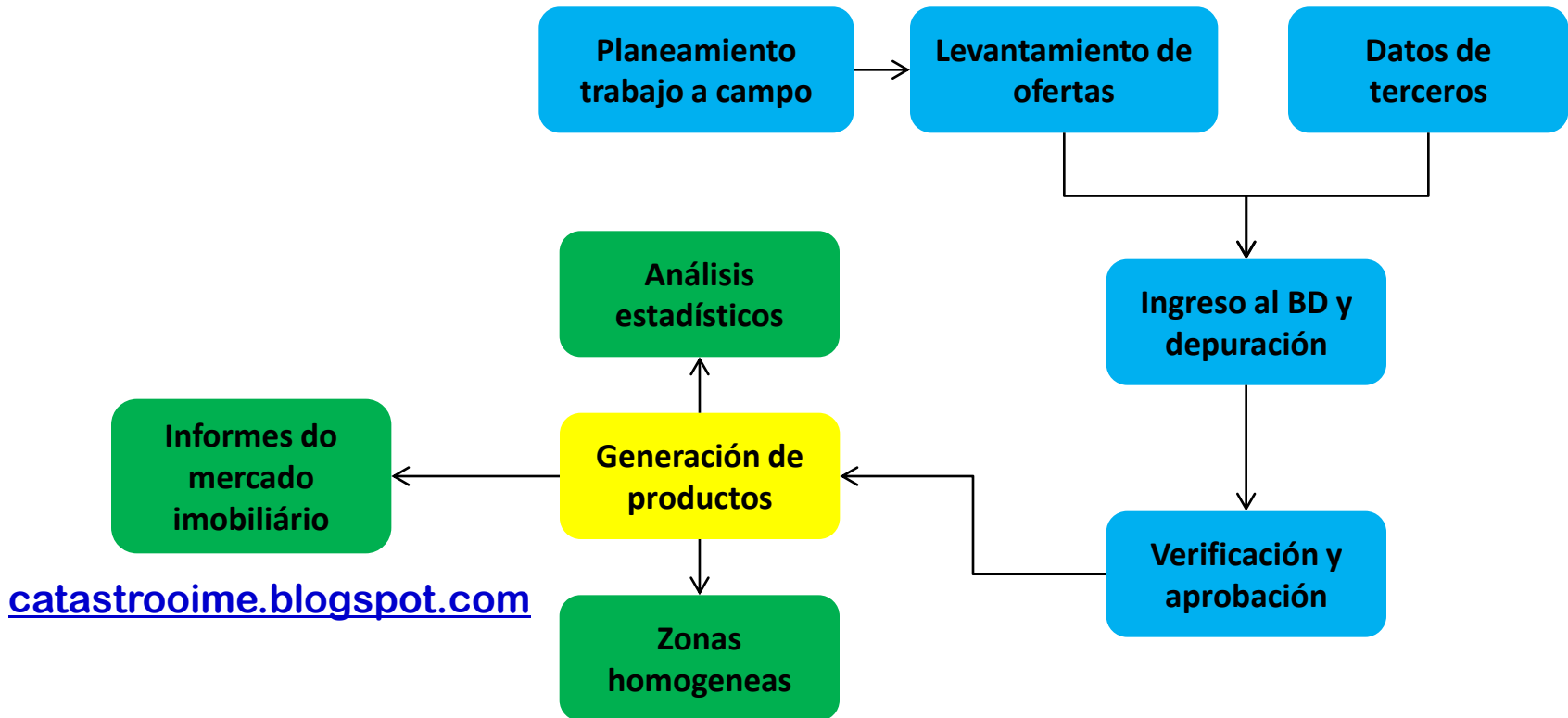
# Algumas reflexões





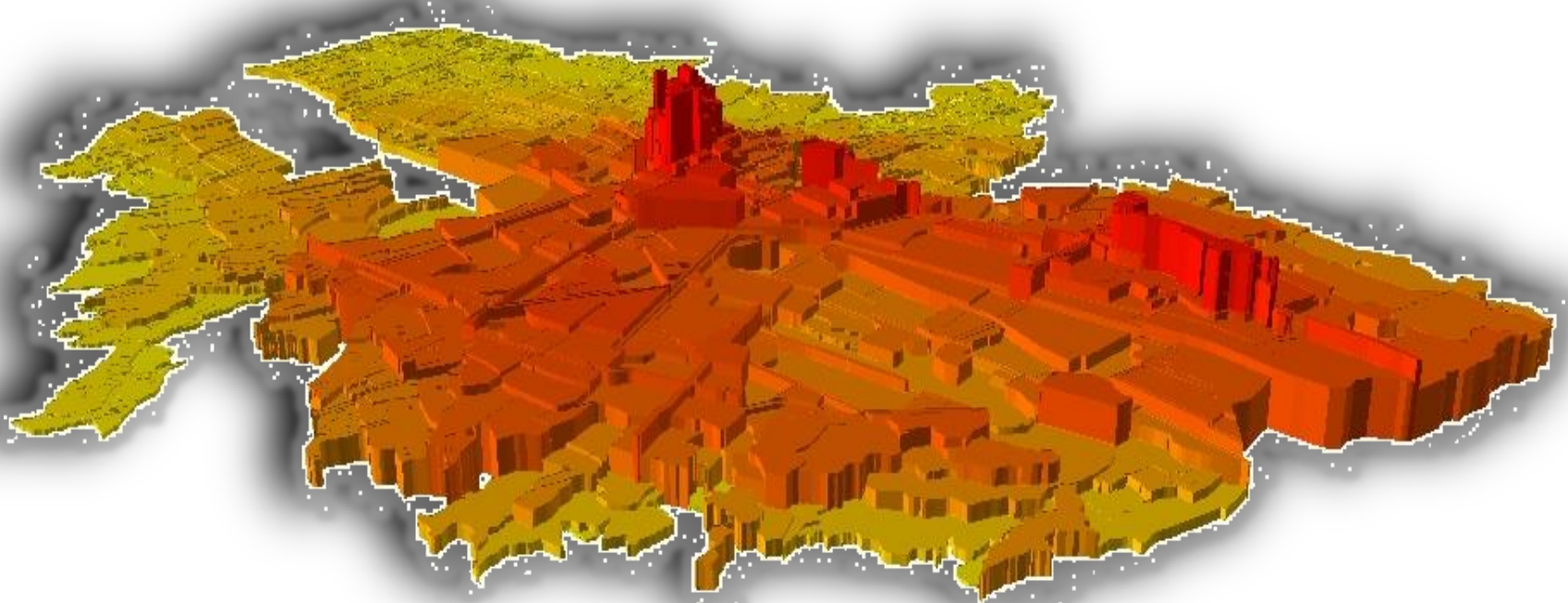
# Algunas reflexões

## Observatorio urbano de Medellín



Iván Darío Cardona

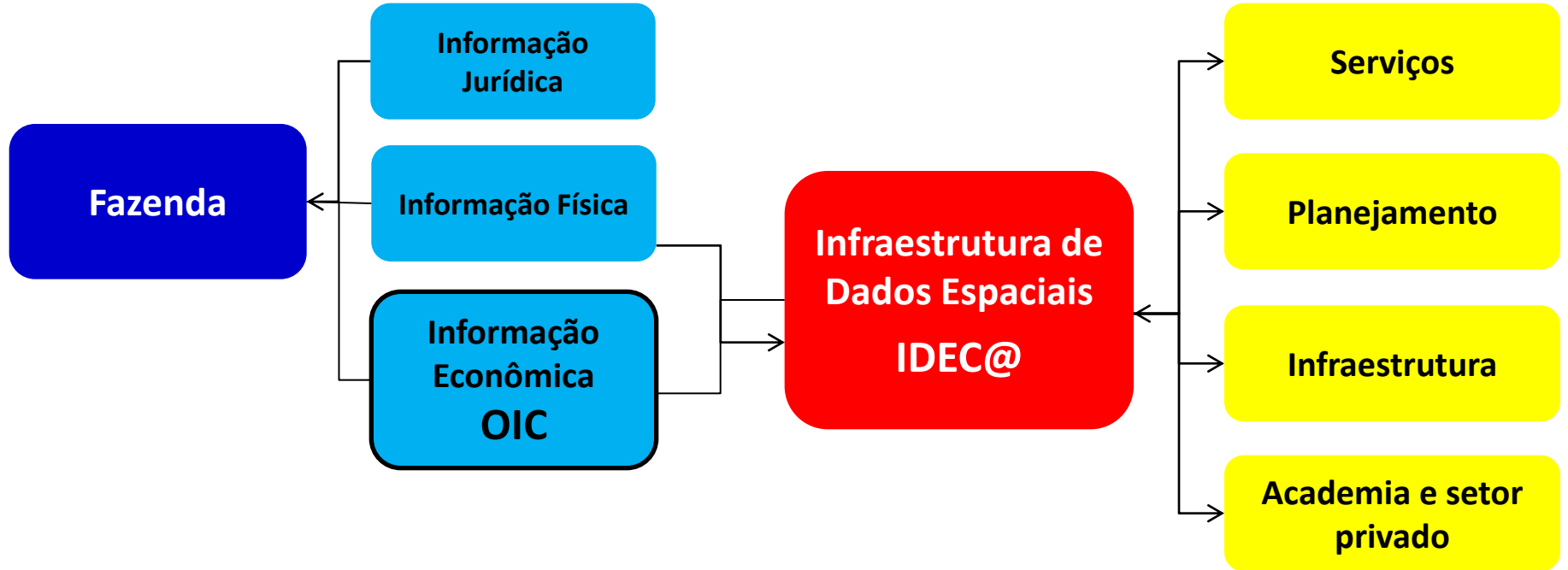
# Algumas reflexões



Iván Darío Cardona

# Algumas reflexões

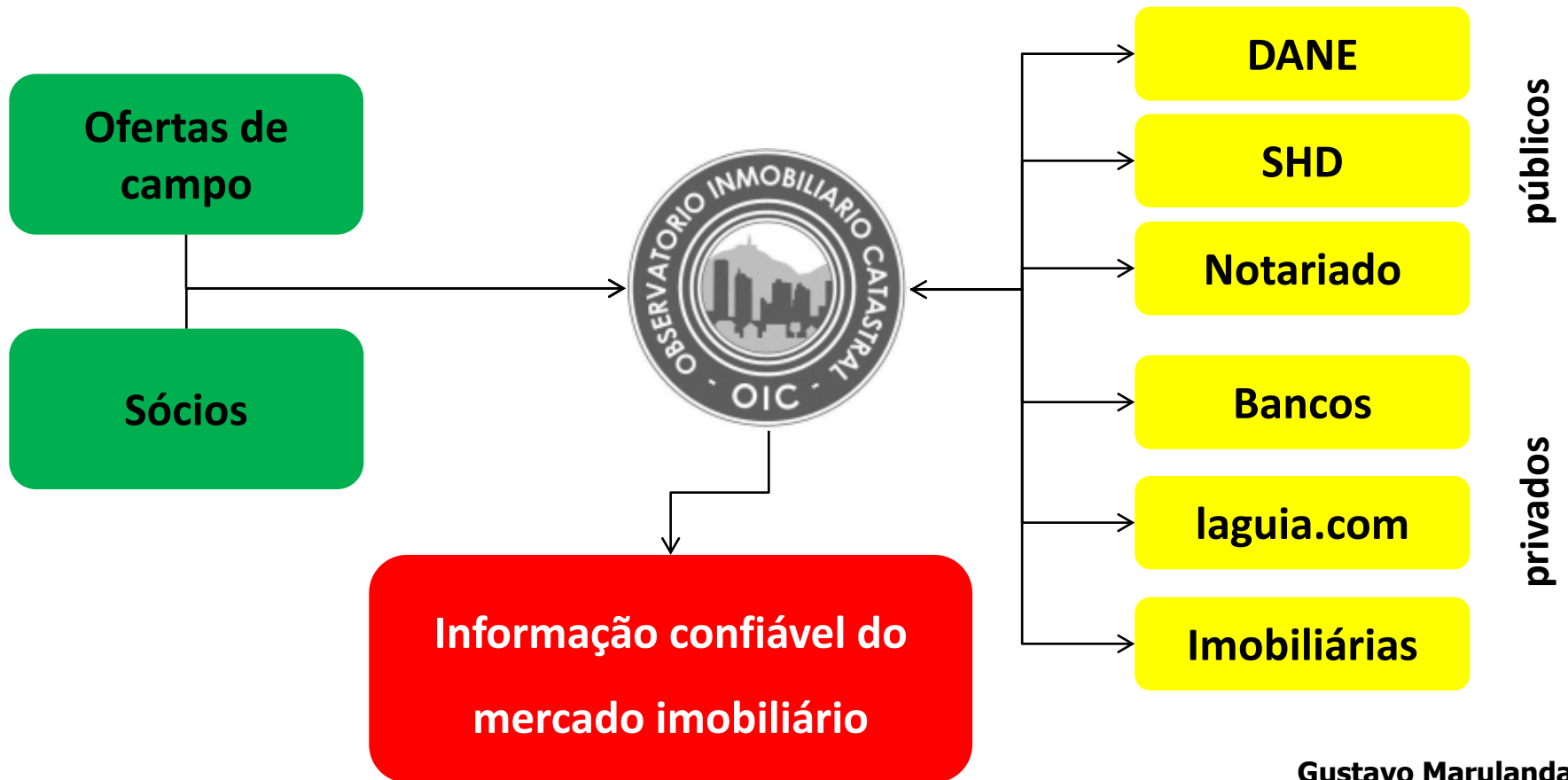
## Observatorio urbano de Bogotá



Gustavo Marulanda

# Algumas reflexões

## Observatorio urbano de Bogotá

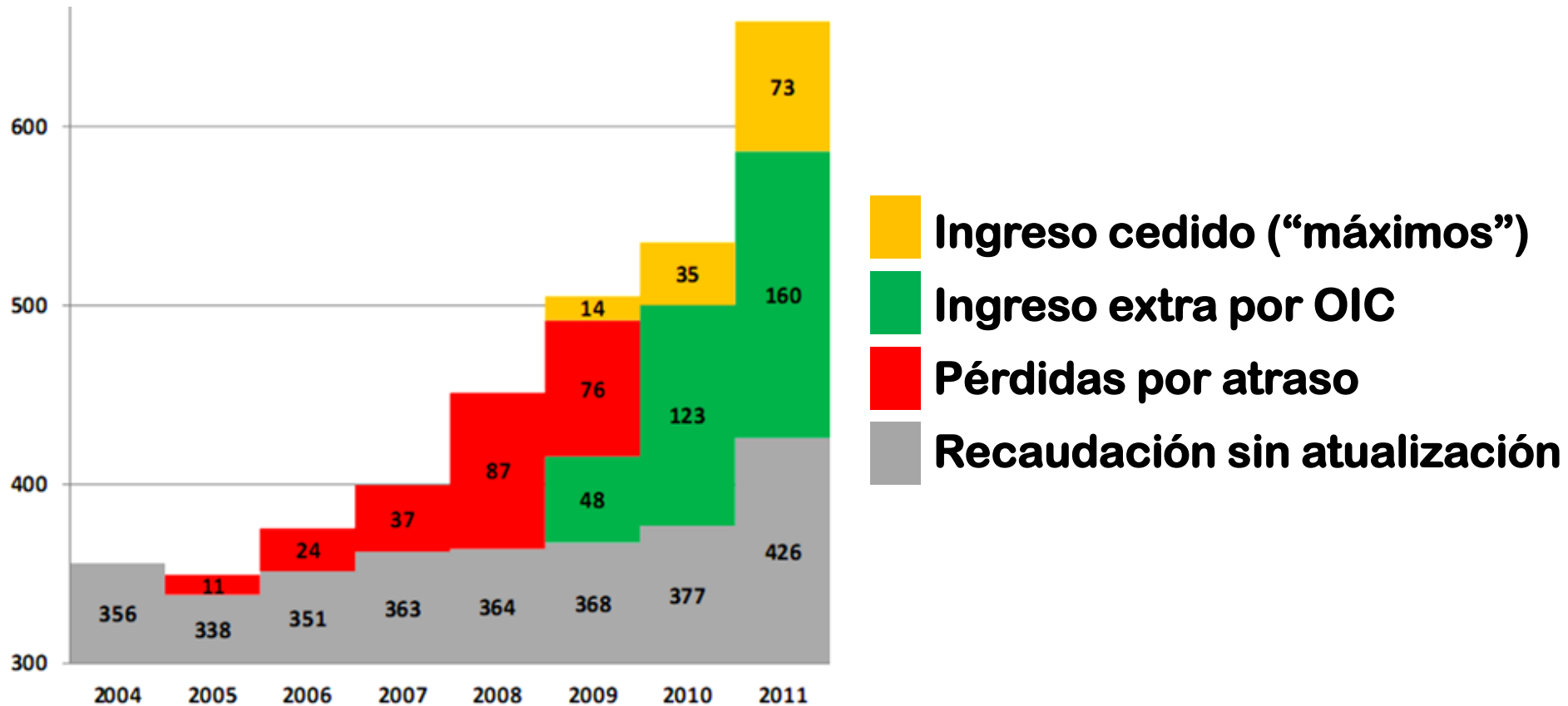


Gustavo Marulanda



# Algumas reflexões

## Observatorio urbano de Bogotá



Fuente: UAECD (Base) y SHD-DEEF (tasas efectivas predial)

Gustavo Marulanda

# Algumas reflexões

## Observatorio urbano de Bogotá

### Costos estimados OIC

COMPONENTE	PERFIL	CANTIDAD	VALOR MENSUAL	TIEMPO (en meses)	VALOR TOTAL COMPONENTE	VALOR TOTAL EN PESOS	VALOR TOTAL EN USD\$ PESOS
DIRECTO -RECURSO HUMANO	PROFESIONAL SUPERVISOR	2	\$ 2.055.828	9	\$ 80.300.642		
	TECNICO	5	\$ 1.367.373	8	\$ 84.777.126		
		18	\$ 1.367.373	9	\$ 343.347.360		
<i>SUBTOTAL 1</i>						\$ 508.425.128	\$ 267.311
INDIRECTOS Y/O ASOCIADOS (*)	TRANSPORTE	4	\$ 4.039.700	9	\$ 145.429.200		
<i>SUBTOTAL 1</i>						\$ 145.429.200	\$ 76.461
<b>GRAN TOTAL</b>						\$ 653.854.328	\$ 343.772

Gustavo Marulanda

# Considerações finais



Hemetério Cardozo

# Considerações finais

O CTM pode contribuir para uma cidade mais justa, democrática, equitativa e acessível...

A cidade é mais **democrática** si se forma, se conforma, se deforma e se reforma, com participação social;

A cidade é mais **equitativa** si se redistribuem as rendas do solo

A cidade é mais **accesível**, si os dados públicos e privados estão disponíveis para todos.







Martim O. Smolka

**Muito obrigado!**

perguntas?



# O cadastro 3D

<http://www.gdmc.nl/3DCadastres/>



FIG joint commission 3 and 7 working group on 3D-Cadastres - Work plan 2010-2014

## Introduction

In the past decade various activities have been conducted related to 3D-Cadastres. The start of the international awareness of this topic was marked by the [workshop on 3D-Cadastres](#) (sponsored by FIG commissions 3 and 7), organized by Delft University of Technology in November 2001. This was followed by virtually a session at every FIG working week and congress afterwards (stimulated by the 2002-2006 FIG working group on 3D-Cadastres). Within cadastral organizations this was paralleled by on-going developments at Cadastral organizations in many countries to provide better 3D-support. The increasing complexity of infrastructures and densely built-up areas requires a proper registration of the legal status (private and public), which only can be provided to a limited extent by the existing 2D cadastral registrations. Despite all research and progress in practise, no country in the world has a true 3D-Cadastre, the functionality is always limited in some manner; e.g. only registering of volumetric parcels in the public registers, but not included in a 3D cadastral map, or limited to a specific type of object with ad hoc semi-3D solutions; e.g. for buildings or infrastructure. At the FIG Congress in April 2010 in Sydney it was decided to form a joint working group on

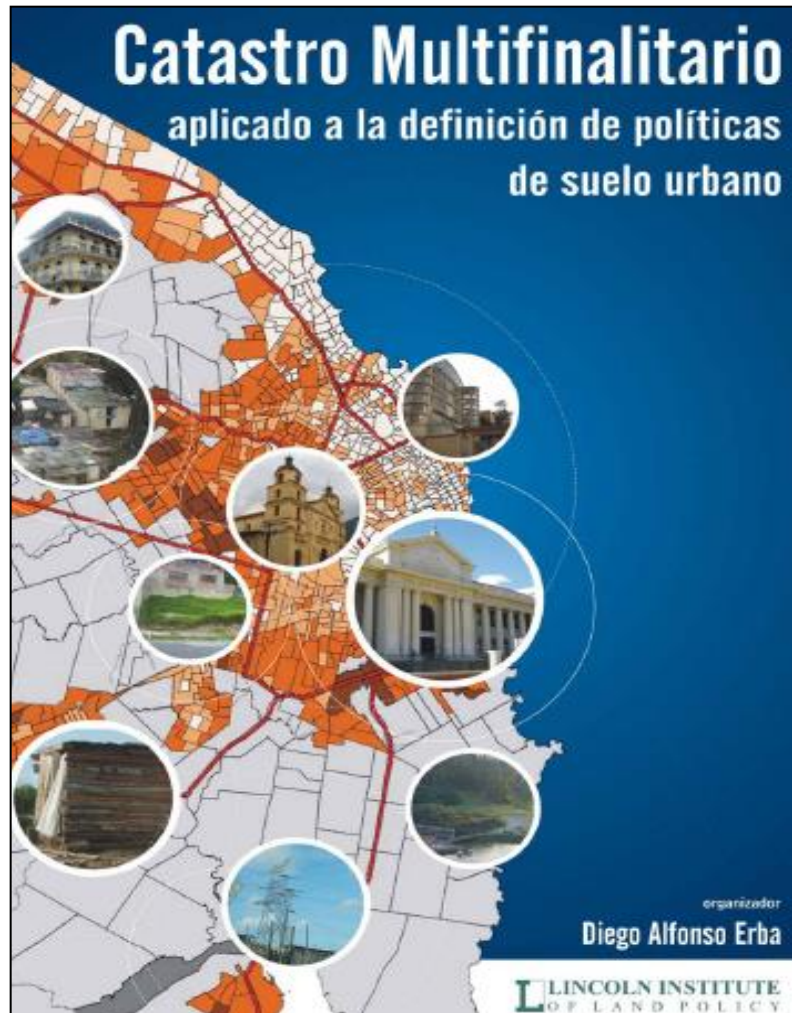
Introduction  
Objectives  
Topics  
Scope  
Realization  
Deliverables  
Operation  
Timetable  
Participants  
Organization  
Literature

# Material de autoestudo

<http://www.capacidades.gov.br/>

<http://lac.leo.lincolninst.edu>





[http://www.lincolninst.edu/pubs/1306 Catastro-multifinalitario-aplicado-a-la-definici%C3%B3n-de-pol%C3%ADticas-de-suelo-Urbano](http://www.lincolninst.edu/pubs/1306_Catastro-multifinalitario-aplicado-a-la-definici%C3%B3n-de-pol%C3%ADticas-de-suelo-Urbano)



[http://www.lincolninst.edu/pubs/1373\\_El-catastro-territorial-en-los-pa%C3%ADses-latinoamericanos](http://www.lincolninst.edu/pubs/1373_El-catastro-territorial-en-los-pa%C3%ADses-latinoamericanos)

MINISTERIO DE LAS CIUDADES, EN COOPERACIÓN  
CON EL INSTITUTO LINCOLN DE POLÍTICAS DE  
SUELO, Y CON APOYO DE LA CAIXA ECONÒMICA  
FEDERAL, ORGULLOSAMENTE PRESENTA:

## José K. Tastro y las Directrices para el Catastro Territorial Multifinalitario

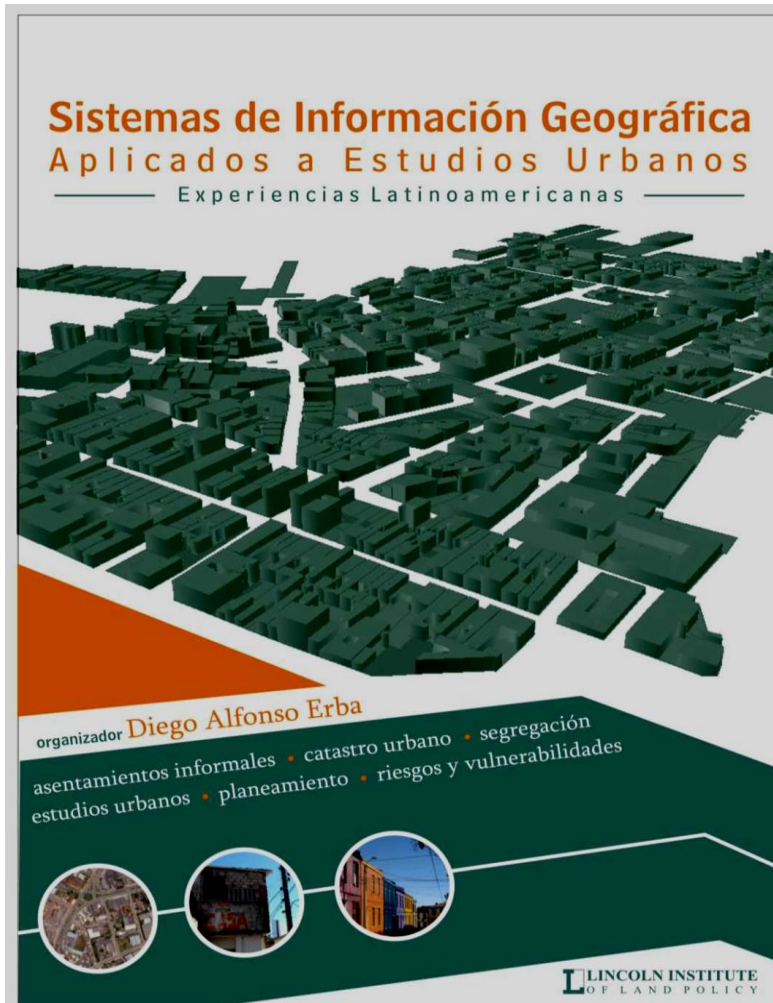


[http://www.lincolninst.edu/pubs/1877\\_Zeca-Dastro-e-as-Diretrizes-para-o-Cadastro-Territorial-Multifinalit%C3%A1rio](http://www.lincolninst.edu/pubs/1877_Zeca-Dastro-e-as-Diretrizes-para-o-Cadastro-Territorial-Multifinalit%C3%A1rio)



[http://www.lincolninst.edu/pubs/1930\\_Diretrizes-para-a-cria%oc3%oa7%oc3%oa3o--institui%oc3%oa7%oc3%oa3o-e-atualiza%oc3%oa7%oc3%oa3o-do-Cadastro-Territorial-Multifinalit%oc3%oa1rio-nos-munic%oc3%oadpios-brasileiros](http://www.lincolninst.edu/pubs/1930_Diretrizes-para-a-cria%oc3%oa7%oc3%oa3o--institui%oc3%oa7%oc3%oa3o-e-atualiza%oc3%oa7%oc3%oa3o-do-Cadastro-Territorial-Multifinalit%oc3%oa1rio-nos-munic%oc3%oadpios-brasileiros)





[http://www.lincolninst.edu/pubs/1174\\_Sistemas-de-Informaci%C3%B3n-Geogr%C3%A1fica-aplicados-a-estudios-urbanos-Experiencias-latinoamericanas](http://www.lincolninst.edu/pubs/1174_Sistemas-de-Informaci%C3%B3n-Geogr%C3%A1fica-aplicados-a-estudios-urbanos-Experiencias-latinoamericanas)



<http://www.lincolninst.edu/pubs/1243-Cadastro-t%C3%A9cnico-multifinalit%C3%A1rio-urbano-e-rural>

The book cover features a central green aerial photograph of a rural landscape with a grid of white crosses. The title and authors' names are printed in white and yellow text on a dark blue background at the bottom. Logos of the organizing institutions are at the very bottom.

**cadastro multifinalitário como instrumento de política fiscal e urbana** org. Diego Erba, Fabrício L. Oliveira, Pedro Novais

**cadastro multifinalitário como instrumento de política fiscal e urbana**

organizadores  
Diego Alfonso Erba  
Fabrício Leal de Oliveira  
Pedro de Novais Lima Junior

PPUR UFRJ LINCOLN INSTITUTE OF LAND POLICY CAIXA Ministério das Cidades

Cadastre Digital de Nova Hordalaga: Um Longo Processo para Implementar "Tecnologias em Desenvolvimento" - © Cadastre Territorial presente, passado e futuro - © Cadastre como instrumento de Política Fiscal  
Cadastro Multifinalitário: Gestão Urbana e Controle Social em Belém - Planejamento Urbano Desapoiado no Brasil Contemporâneo - Cadastre Técnico Multifinalitário: Instrumento de Política Fiscal e Urbana

[www.agrimensores.org.ar/licamul.htm](http://www.agrimensores.org.ar/licamul.htm)