#### ABOUT ORIENTATION

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- Generalisation
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- Principle
- Indicators
- Results

#### CONCLUSION

Cécile Duchêne - Sylvain Bard - Xavier Barillot

Anne Ruas - Jenny Trévisan - Florence Holzapfel

# Quantitative and qualitative description of building orientation



CONTEXT :

- cartographic generalisation
- vector topographic data
- buildings

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What is orientation for ?

Preservation of buildings' characteristics :

- Absolute orientation

- Relative orientation



- Group orientation



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# **Orientation ?**





### More than one single orientation

- General orientation
- Walls orientation



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# **Generalisation problems**

- Working on the adjustment of buildings
   generalisation
  - Lamps2AGENT
- Problems encountered :



How can we solve this problem ? → find THE measure !



### Comparisons

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### **GENERAL**





GENERAL

### Wall average Statistical weighting Smallest MBR







### New walls orientation ?

**Best general** orientation ICA Generalisation Workshop - April 2003 - 6/16

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# **Principle of the new measure**

- Principle
  - based on the statistical weighting measure
  - adapted to compute walls orientation :  $\pi/2$

### Wall statistical weighting orientation



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ABOUT

# **Principle of the new measure**

### Wall statistical weighting orientation



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### **Principle of the new measure**

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 Problem of this quantitative approach : we could always find an orientation even if it is meaningless :



### Introduction of qualitative indicators...

### Indicators

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- each candidate
   orientation is
   represented by its
   weight
  - → Appearance of leaves around the main orientations
- The main orientations are the longest edges of the leaves
  - Number of orientations

Confidence indicator

Weight of returned orientation
 Maximum theoretic weight

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### **Results of the new measure**

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#### **Results of the new measure** BUILDING ORIENTATION Confidence Number of **CHARACTERISATION OF BUILDINGS :** ABOUT indicator leaves ORIENTATION perpendicular walls • What for ? 5 07 Definitions ≥ 80% CONTEXT Generalisation not very Some measures 63 12 Comparisons perpendicular walls **A NEW** several different MEASURE 55.35 • Principle orientations of 18.45 74 61 ≥2 Indicators < 80% walls Results no walls CONCLUSION no orientation

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# **Combinations of general and walls orientations**



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ORIENTATION

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# Conclusion

### **TO CHARACTERISE BUILDING ORIENTATION**

General orientation used = SMBR

Walls orientation computed = wall statistical weighting measure with confidence indicators

 To better activate a generalisation process
 To better evaluate the quality of the generalisation

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# **Perspectives**

Some buildings need more characterisation to be generalised :



### Take the orientation of the shape into account = the 3rd kind of orientation

Work on the skeleton in progress [Barillot]

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# Thank you !

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