INSTITUT NATIONAL
DE L'INFORMATION
GÉOGRAPHIQUE
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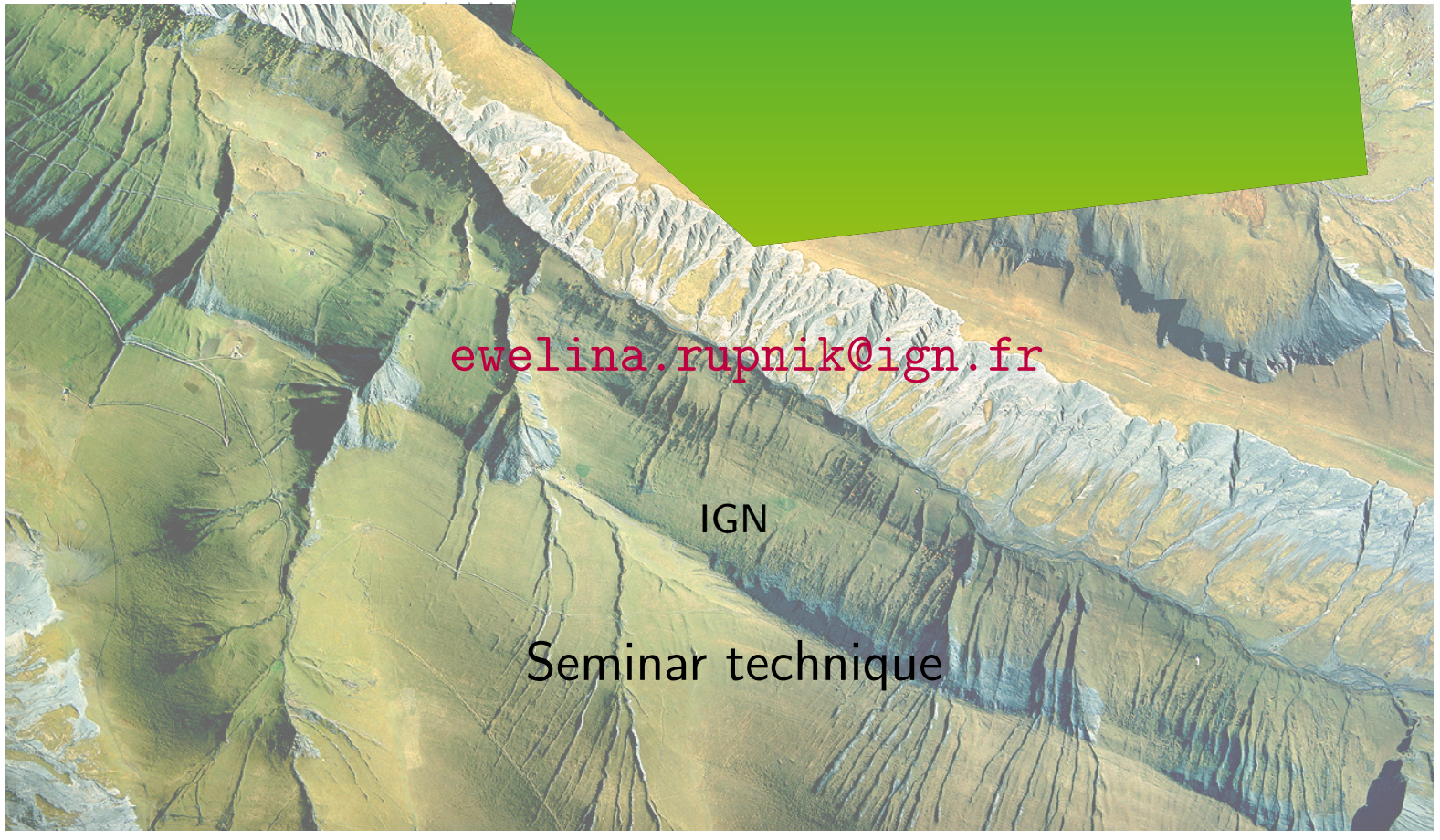
MicMac – un aperçu global



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IGN

Seminar technique

Introduction

Tie points extraction

- No a priori about the geometry
- With a priori about the geometry
- Reduction algorithms

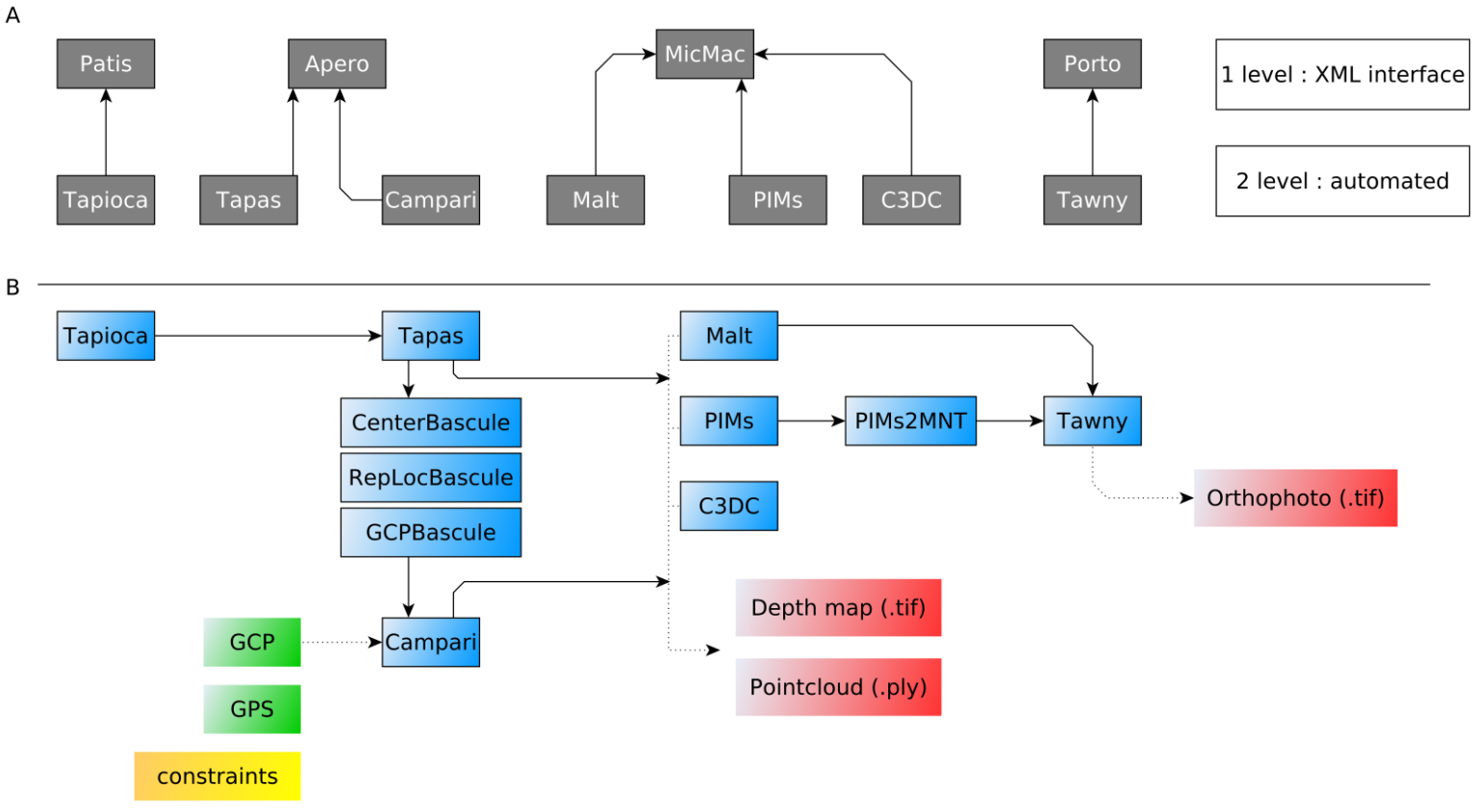
Image orientation

- SfM
- Collinearity-based BBA
- Structureless BBA

Georeferencing

Introduction

Overview of the processing pipeline



Tie points extraction

Tie points extraction

No a priori about the geometry

Tie points extraction
No *a priori* about the geometry

Extraction algorithms

- SIFT,
  different modes of SIFT (Line, MulScale), i.e. when topology of the acquisition is known (e.g. linear in drone acquisitions or Stereopolosh acquistion)
- AIME (presented by MPD during spotlight), under developpment; generally faster than SIFT

Tie points extraction

With a priori about the geometry

Tie points extraction
With *a priori* about the geometry

- TiePTri

Tie points extraction

Reduction algorithms

Tie points reduction algorithms

- bla bla

3 Image orientation

Image orientation
Approaches

1. no a priori, iterative (i.e. SfM)
2. with a priori, collinearity-based bundle block adjustment (BBA) when initial orientations are known
3. structureless BBA

Image orientation

SfM

SfM

Image orientation

Collinearity-based BBA

Collinearity-based BBA

Image orientation

Structureless BBA

Structureless BBA

Georeferencing

Georeferencing

Mathematical model

- rigid spatial similarity transformation (SST)
  (i.e. 7-param trafo)
- "non-rigid" SST (i.e. 7-param and a polynomial)

Georeferencing

Mathematical model

- rigid spatial similarity transformation (SST)
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Possible input data

1. ground control points
2. GNSS perspective centers

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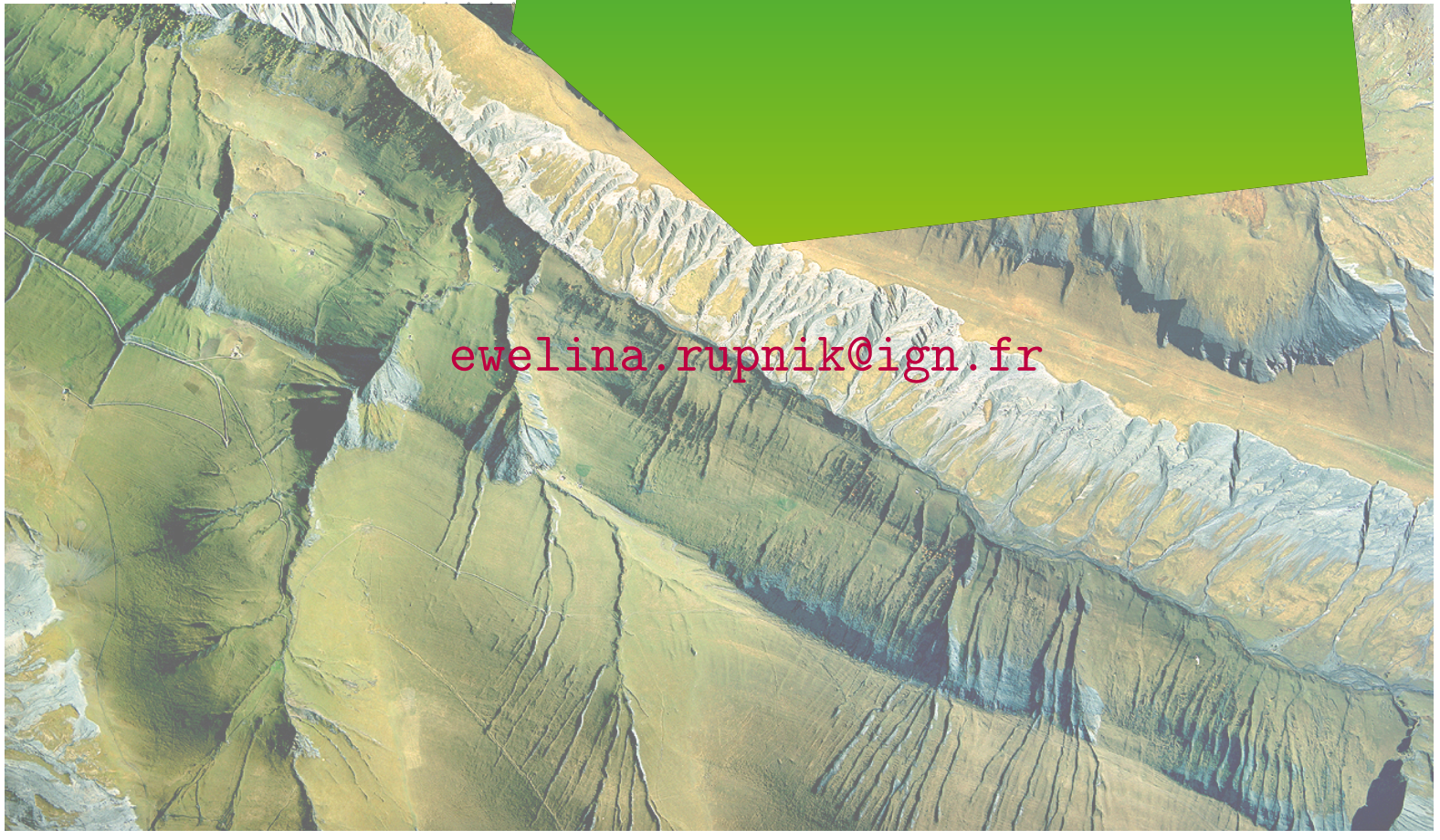
Thank you for your attention!



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