Objective - Polarimetry adapted augmentation

- Adaptation to the modality constraints
- Preserving modality-related physics
- Improving performances of processing
- Proving the necessity of modality-related augmentation

Usual approach

Interpolation / Transformation

- Improve performance / avoid overfitting
- Highly difficult to apply to physics-related image
  \( \Rightarrow \) requires modality interpolability

Problem

- Polarimetry is hardly interpolable
- Angle of polarization is not invariant to pose changes

The proposal

\[ I' = f(I) \]

- The three polarization representative images
- The pipeline

Comparative Results

- Groundtruth
- Not Augmented
- Standard
- Regularized

In Brief

- A polarimetric physics-responsive set of transformations
- Increased performances on segmentation task
- Proof of necessity: data must be augmented according to the modality properties
- Very limited amount of possible transformations
- Augmentation cannot replace a consistent amount of data
- Necessitates a considerable pre-processing

Reference