EVALUATION OF RADARSAT STANDARD MODE DATA FOR DETECTION OF DEFORESTED AREAS IN BRAZILIAN AMAZÔNIA



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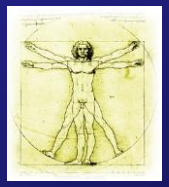


Objectives

Evaluate potential of using Radarsat standard mode data for detection of deforested areas

- **Multiplicative model**

(**Z = X*Y** derived from $\Gamma^{1/2}$, K_A, G^0_A distributions)

- **Iterated conditional classifier (ICM)**

Land cover classes

Forest

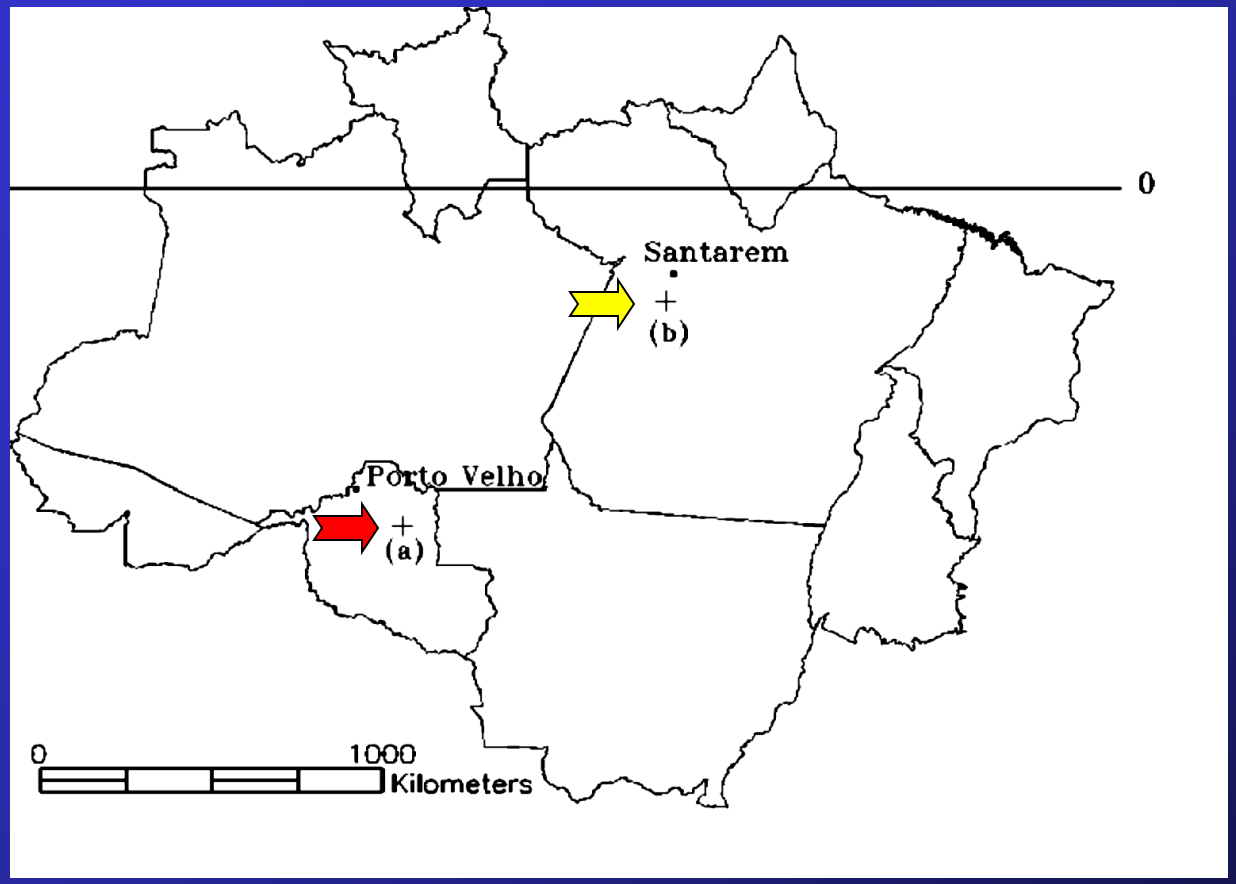
Pastures

Degraded pastures

Secondary forest

Recent clearings

Burnings

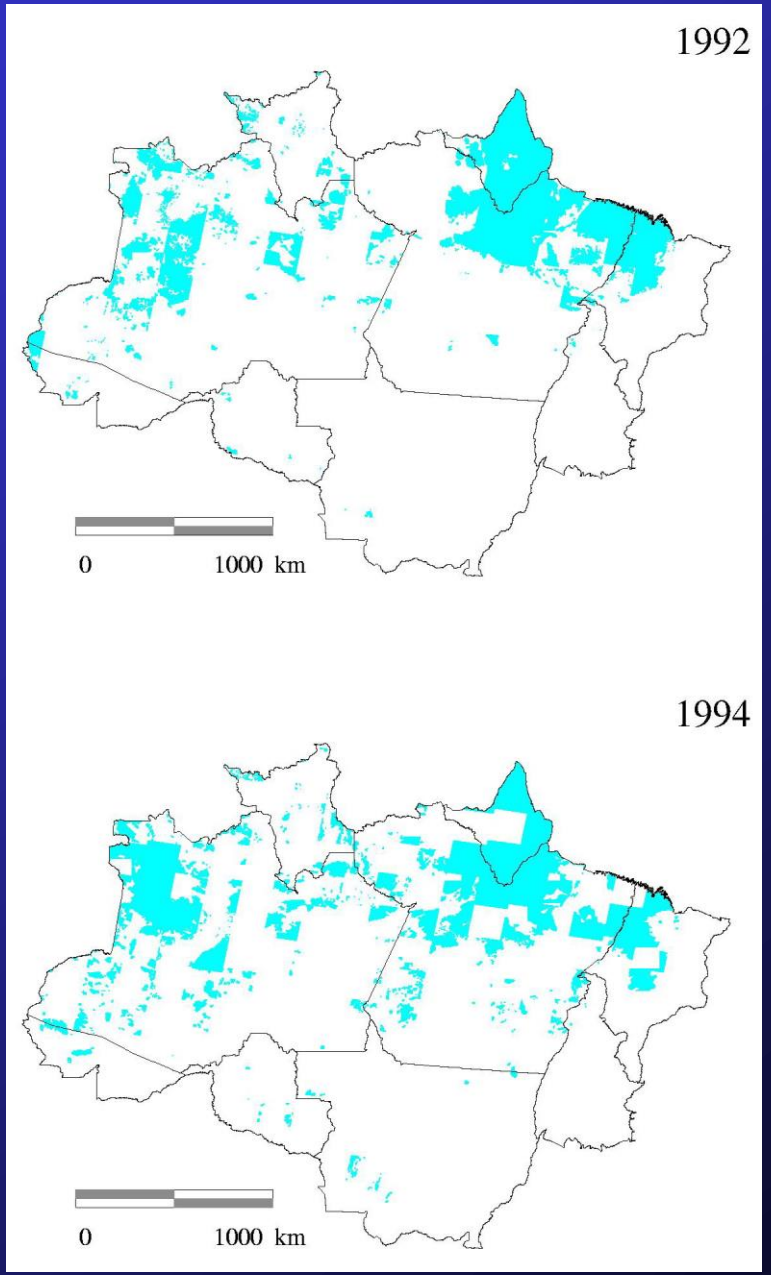


(a) S2A (04 July 1997); S3A (07 Sept 1997)

(b) S7D (05 Dec 1996)

Why Radarsat ?

- Monitoring benefits from multi-sensor approach
- Optical and microwave complement each other
- Cloud cover



Classification results

Image	Date	Land cover classes	$\hat{\kappa}$	$\sigma^2_{\hat{k}}$ (x10^{-5})
S2A	4-Jul-97	For^1, Pas^1, Deg^1	0.34	2.8
S3A	7-Sep-97	For^3, Bur^2, Pas^2	0.52	1.9
S3A	7-Sep-97	For^2, Pas^1	0.74	3.2
S7D	5-Dec-96	For^2, Rec^1, Bur^1, Pas^1	0.41	7.0

(1, 2 and 3: distributions $\Gamma^{1/2}$, K_A and $\mathbf{G}^0_A$)

Conclusions

* Best results: pasture vs forest

* Regeneration and overgrown pasture: challenging

* Detection of recent cleared areas: after burning

* Acquisition at the end of the dry season

* Other processing approaches