General validation procedure: ***data acquisition…***

- Site selection
- Sampling scheme: select and mark plots
- Collect data…

Field

- Observe collection protocol
- Download
- QA
- Process/average
- Tabulate (with coordinates!)
- Register in Mercury

"Tasked" acquisitions

- Reserve flight/tasking
- Acquire data
- QA
- Geocode
- Radiometric corr.
- Atmospheric corr.
- Process/simulate

"Automatic" acquisitions

- Include in sensor's acquisition plan
- Respect fixed timing
- Check QA metadata
- Check or do geocoding
- Check or do radiometric corr.
- Check or do Atmospheric corr.

General validation procedure: ***correlative analysis***

Field data ↔ "Tasked" acquisitions: Airborne and high res. Satellite ↔ Automatic acquisitions: reference data and products to be validated

Compare:

- points to pixels
- parameters and distributions
- relationships
- surfaces

Need to consider all three elements as samples from unknown distributions, use each component to estimate the respective distribution, and compare *distributions*

General validation procedure: ***product uncertainty***

Science teams' responsibility

Build on networks (Fluxnet, LAI-Network)

Level of refinement:

- global
- biome/region ⟵ (target?)
- tile

"Product" Specific techniques:

- categorical (false negatives and positives)
- continuous products (confidence intervals)

General validation procedure: ***field data acquisition…***

- Observe collection protocol
- Download
- QA
- Process/average
- Tabulate (with GPS coordinates!)
- Register in Mercury

Land products

Product	Protocol Development	Harvard Forest	Ji-Parana	Tapajos	Walker Branch	Barton Bendish	Bondville,IL	Maricopa Ag.	USDA ARS	VCR	ARM/CART	Konza Prarie	Sevilleta LTER	Uardry	Mandolgobi	BOREAS, NSA	BOREAS, SSA	CascadesLTER	Howland	Krasnoyarsk	Wisc.LTER/Park Falls	Jornada LTER	Mongu	SALSA	Skukuza
Surf. Reflect.	*from PROVEs*				1				1	1	1	1			1				1				1		1
Albedo/BRDF	*from PROVEs*	1				1			1		1	1			1				1				1		1
LST	Wan's EO 11(3)																				1				
VI	*from PROVEs*														1								1		1
LC - BU	IGBP val.																								
LC, LCC - Umd	IGBP val.																								
Fire/Burn	S2K																						1		1
Snow/Ice	Hall's EO 11(4)																1								
LAI/FPAR	BigFoot, LAI-net			1		1	1				1	1			1	1		1			1	1	1	1	1
PSN/NPP	Fluxnet				1		1					1			1	1									
		Bigfoot (Cimel?)		Asner	Baldocchi?	Barnsley	Bigfoot, Meyer		Liang		Walter-Shea	BigFoot, Meyer	Shore	Hook	Honda	Bigfoot/CCRS	Shi, BERMS(?)	Law, Cohen(?)		Deering	Gower	Asner	Privette	Ji, Pinker	Privette

General validation procedure: ***tasked image data acquisition…***

- Reserve flight/tasking
- Acquire data
- QA
- Geocode
- Radiometric corr.
- Atmospheric corr.
- Process/simulate

General validation procedure: ***satellite data acquisition…***

- Include site in sensor's acquisition plan
- Respect fixed timing
- Check QA metadata
- Check or do geocoding
- Check or do radiometric corr.
- Check or do Atmospheric corr.