## Improvement of the IGS station coverage in Latin America



Sistema de Referencia Geocéntrico para las Américas



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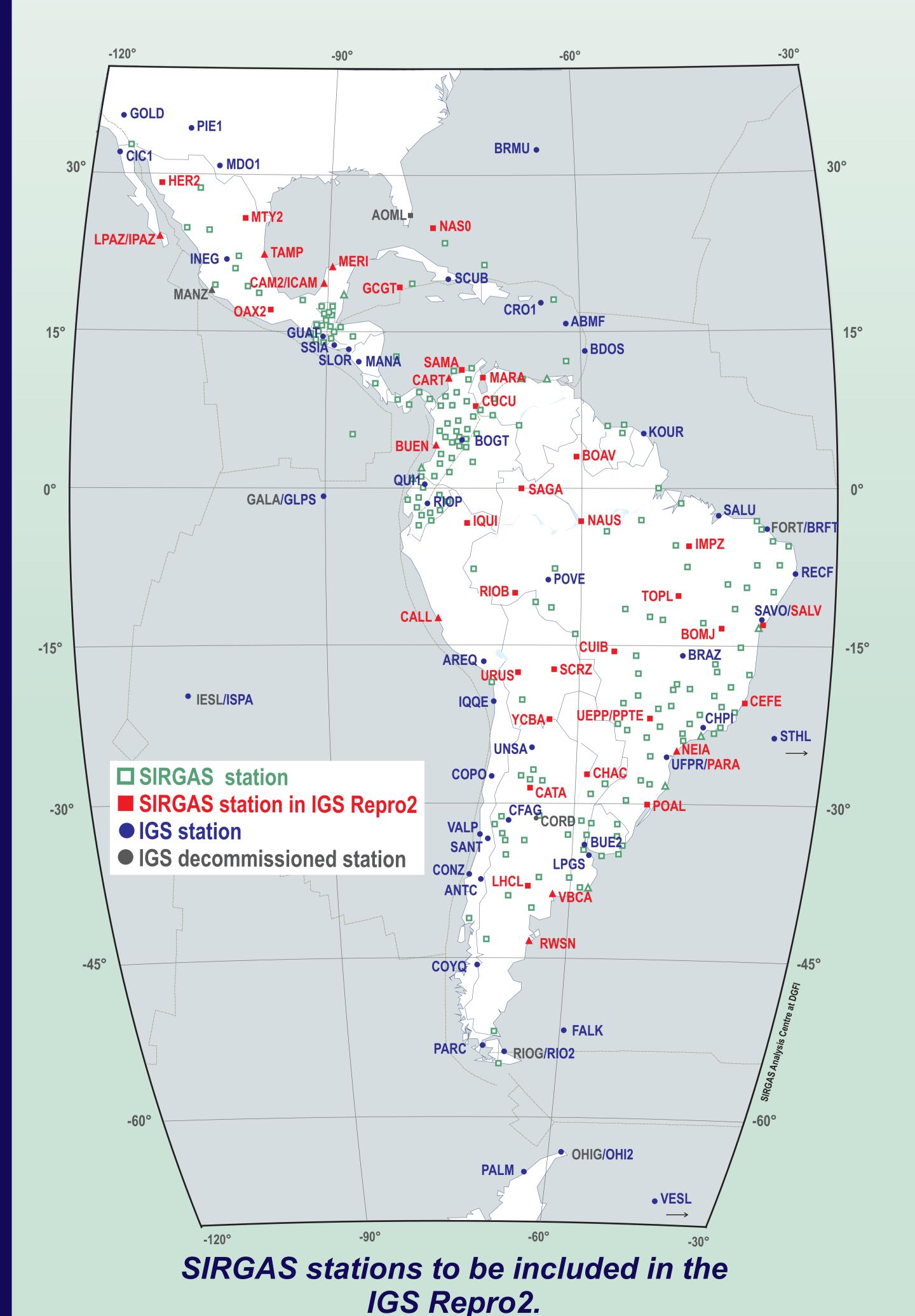
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After the strong earthquake in the Chilean Region Maule on February 27, 2010, a huge percentage of existing IGS reference frame stations in South America suffered an irreparable discontinuity in their time series. Coseismic displacements between 5 m at the Pacific Coast and 2 cm at the Atlantic Coast in Argentina and Uruguay were detected. Postseismic movements after the main earthquake and its aftershocks are also evident in the station position time series. Thereby, the reliability of the recently launched ITRF2008 and IGS08 reference frames decreased considerably in South America; and the affected stations are no longer usable as a basis for the GNSS data analysis or to guarantee the longterm stability of the ITRF in this region.

Considering the achievements reached within the regional reference frame SIRGAS and the planned second reprocessing campaign of the IGS global network, a set of continuously operating SIRGAS stations satisfying the IGS requirements was proposed to be included in this reprocessing with the main objective of improving the IGS station coverage in Latin America. This selection was evaluated by the IGS Reference Frame Working Group, and after some interaction with the IGS Global Analysis Centres, it was decided to include 36 SIRGAS stations not only in the IGS reprocessing but also in the present routine IGS processing. Metadata and all existing observations (historical and present data) of these stations are available at the IGS data centres since January 2012. The next step is to manage, together with the IGS Network Coordinator, the formal integration of these stations in the IGS network.



Main characteristics of the SIRGAS stations selected to be included in the IGS Repro2.

		OPERATOR	LOCATION			GLONASS		TIME SPAN															
CODE	DOMES		LOCATION COUNTRY		TIDE GAUGE		DISCONTINUITY	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
BOAV	41636M001	IBGE	Boa Vista	BR		Х																	
вомј	41612M001	IBGE/INCRA	B. J. da Lapa	BR		Х																	
BUEN	41912S001	IGAC	Buenaventura	СО	Х																		
CALL	42205M001	DGFI/IGN-Pe	El Callao	PE	Х	Х																	
CAM2	40514M001	INITO!					Station																
ICAM	40514M002	INEGI	Campeche	MX	X		replacement																
CART	41902M001	IGAC	Cartagena	СО	Х																		
CATA	41534M001	AGC/IGN-Ar	San Fernando	AR		Х																	
CEFE	41637M001	IBGE	Vitoria	BR		Х																	
CHAC	41553M001	APA/IGN-Ar	Resistencia	AR		Х																	
cucu	41904S001	IGAC	Cucuta	СО		Х																	
CUIB	41603M001	IBGE	Cuiaba	BR																			
GCGT	80401M001	CIG	Cayman Ids.	UK		Х																	
HER2	40522M001	INEGI	Hermosillo	MX																			
IMPZ	41615M001	IBGE	Imperatriz	BR		Х																	
IQUI	42204M001	DGFI/IGN-Pe	Iquitos	PE		Х																	
LHCL	41518S001	CERI/IGN-Ar	Lihuel Calel	AR			Earthquake																
	40521M001						Feb. 2010																
	40521M001	∃INEGI	La Paz	MX	X		Station replacement																
							Equipment																
MARA	42402M001	DGFI	Maracaibo	VE			replacement																
MERI	40520M001	INEGI	Merida	MX																			
MTY2	40518M001	INEGI	Monterrey	MX																			
NAS0	43607S001	UCAR	Bahamas	BS																			
NAUS	41614M002	IBGE	Manaus	BR																			
NEIA	41620M002	IBGE	Cananeia	BR		Х																	
OAX2	40517M001	INEGI	Oaxaca	MX																			
PARA	41610M001	IBGE	Curitiba	BR		X	Station																
UFPR	41610M002	.502	Garringa	DIX			replacement																
POAL	41616M001	IBGE	Porto Alegre	BR																			
RIOB	41645M001	IBGE	Rio Branco	BR																			
RWSN	41513M001	UNLP	Rawson	AR	Х		Earthquake Feb. 2010																
SAGA	41639M001	IBGE	São Gabriel	BR			reb. 2010																
	41618M001						Station																
	41643M001	<b>∤IBGE</b>	Salvador	BR		X	replacement																
	41928S001		Santa Marta	СО		Х	-															_	
	41801M001		Santa Cruz	ВО																			
	40516M001		Tampico	MX	X																		
	41648M001		Palmas	BR																			
	41611M001		Presidente				Station																
	41611M002	<b>∃IBGE</b>	Prudente	BR		X	replacement																
		DGFI/IGM-Bo		ВО		Х																	
			Bahia Blanca	AR	Х		Earthquake																
					^		Feb. 2010																
YCBA	41803M001	DGFI/IGM-Bo	Yacuiba	ВО		X																	