

# ISO Geodetic Registry

<i>Item class</i>	GeodeticCRS	
<i>Name</i>	<b>SIRGAS-CON SIR11P01 - LatLonEHt</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	303	
<i>Alias</i>	SIRGAS	
<i>Alias</i>	SIRGAS-CON	
<i>Alias</i>	SIRGAS Multi-Year Solution 2011	
<i>Alias</i>	Geocentric Reference System for the Americas	
<i>Alias</i>	Sistema de Referencia Geocentrico para las Americas	
<i>Alias</i>	SIR11P01	
<i>Information source</i>	<i>Title</i>	Sistema de Referencia Geocentrico para las Americas (SIRGAS)
	<i>Author</i>	Sistema de Referencia Geocéntrico para las Américas (SIRGAS)
	<i>Publisher</i>	Sistema de Referencia Geocéntrico para las Américas (SIRGAS)
	<i>Publication date</i>	2018
	<i>Other citation details</i>	Website
<i>Information source</i>	<i>Title</i>	The 2009 Horizontal Velocity Field for South America and the Caribbean
	<i>Author</i>	H. Drewes, O. Heidbach
	<i>Publisher</i>	Springer Berlin Heidelberg
	<i>Publication date</i>	2012
	<i>Series/Journal name</i>	International Association of Geodesy Symposia
	<i>Issue identification</i>	136.0
	<i>Page</i>	657-664
	<i>Other citation details</i>	In Kenyon S., Pacino M., Marti U. (eds) Geodesy for Planet Earth. International Association of Geodesy Symposia, Vol 136. Springer, Berlin, Heidelberg
<i>Information source</i>	<i>Title</i>	Recent activities of the IGS Regional Network Associate Analysis Centre for SIRGAS (IGS RNAAC SIR)
	<i>Author</i>	L. Sanchez, M. Seitz
	<i>Publisher</i>	Deutsches Geodaetisches Forschungsinstitut, Munich, Germany, PANGAEA
	<i>Publication date</i>	2011
	<i>Series/Journal name</i>	DGFI Report
	<i>Issue identification</i>	No. 87
	<i>Other citation details</i>	Data for paper included in supplement SIRGAS reference frame realization SIR11P01.
<i>Data source</i>	ISO Geodetic Registry	
<i>Scope</i>	Spatial referencing	
<i>Datum</i>	SIRGAS Continuously Operating Network SIR11P01	
<i>Coordinate System</i>	Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height. Orientations: north, east, up. UoM: degree, degree, metre.	

## Extent

<i>Description</i>	<b>South America - onshore and offshore. Central America - onshore and offshore. Mexico - onshore and offshore.</b>
--------------------	---

<i>Geographic Bounding Box</i>	<i>West-bound longitude</i>	-122.19
	<i>North-bound latitude</i>	32.72
	<i>East-bound longitude</i>	-25.28
	<i>South-bound latitude</i>	-59.87

# ISO Geodetic Registry

<i>Item class</i>	GeodeticDatum																
<i>Name</i>	<b>SIRGAS Continuously Operating Network SIR11P01</b>																
<i>Item status</i>	VALID																
<i>Identifier</i>	174																
<i>Alias</i>	SIRGAS																
<i>Alias</i>	SIRGAS-CON																
<i>Alias</i>	SIRGAS Multi-Year Solution 2011																
<i>Alias</i>	Geocentric Reference System for the Americas																
<i>Alias</i>	Sistema de Referencia Geocentrico para las Americas																
<i>Alias</i>	SIR11P01																
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Sistema de Referencia Geocentrico para las Americas (SIRGAS)</td></tr> <tr> <td><i>Author</i></td><td>Sistema de Referencia Geocéntrico para las Américas (SIRGAS)</td></tr> <tr> <td><i>Publisher</i></td><td>Sistema de Referencia Geocéntrico para las Américas (SIRGAS)</td></tr> <tr> <td><i>Publication date</i></td><td>2018</td></tr> <tr> <td><i>Other citation details</i></td><td>Website</td></tr> </table>	<i>Title</i>	Sistema de Referencia Geocentrico para las Americas (SIRGAS)	<i>Author</i>	Sistema de Referencia Geocéntrico para las Américas (SIRGAS)	<i>Publisher</i>	Sistema de Referencia Geocéntrico para las Américas (SIRGAS)	<i>Publication date</i>	2018	<i>Other citation details</i>	Website						
<i>Title</i>	Sistema de Referencia Geocentrico para las Americas (SIRGAS)																
<i>Author</i>	Sistema de Referencia Geocéntrico para las Américas (SIRGAS)																
<i>Publisher</i>	Sistema de Referencia Geocéntrico para las Américas (SIRGAS)																
<i>Publication date</i>	2018																
<i>Other citation details</i>	Website																
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>The 2009 Horizontal Velocity Field for South America and the Caribbean</td></tr> <tr> <td><i>Author</i></td><td>H. Drewes, O. Heidbach</td></tr> <tr> <td><i>Publisher</i></td><td>Springer Berlin Heidelberg</td></tr> <tr> <td><i>Publication date</i></td><td>2012</td></tr> <tr> <td><i>Series/Journal name</i></td><td>International Association of Geodesy Symposia</td></tr> <tr> <td><i>Issue identification</i></td><td>136.0</td></tr> <tr> <td><i>Page</i></td><td>657-664</td></tr> <tr> <td><i>Other citation details</i></td><td>In Kenyon S., Pacino M., Marti U. (eds) Geodesy for Planet Earth. International Association of Geodesy Symposia, Vol 136. Springer, Berlin, Heidelberg</td></tr> </table>	<i>Title</i>	The 2009 Horizontal Velocity Field for South America and the Caribbean	<i>Author</i>	H. Drewes, O. Heidbach	<i>Publisher</i>	Springer Berlin Heidelberg	<i>Publication date</i>	2012	<i>Series/Journal name</i>	International Association of Geodesy Symposia	<i>Issue identification</i>	136.0	<i>Page</i>	657-664	<i>Other citation details</i>	In Kenyon S., Pacino M., Marti U. (eds) Geodesy for Planet Earth. International Association of Geodesy Symposia, Vol 136. Springer, Berlin, Heidelberg
<i>Title</i>	The 2009 Horizontal Velocity Field for South America and the Caribbean																
<i>Author</i>	H. Drewes, O. Heidbach																
<i>Publisher</i>	Springer Berlin Heidelberg																
<i>Publication date</i>	2012																
<i>Series/Journal name</i>	International Association of Geodesy Symposia																
<i>Issue identification</i>	136.0																
<i>Page</i>	657-664																
<i>Other citation details</i>	In Kenyon S., Pacino M., Marti U. (eds) Geodesy for Planet Earth. International Association of Geodesy Symposia, Vol 136. Springer, Berlin, Heidelberg																
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Recent activities of the IGS Regional Network Associate Analysis Centre for SIRGAS (IGS RNAAC SIR)</td></tr> <tr> <td><i>Author</i></td><td>L. Sanchez, M. Seitz</td></tr> <tr> <td><i>Publisher</i></td><td>Deutsches Geodaetisches Forschungsinstitut, Munich, Germany, PANGAEA</td></tr> <tr> <td><i>Publication date</i></td><td>2011</td></tr> <tr> <td><i>Series/Journal name</i></td><td>DGFI Report</td></tr> <tr> <td><i>Issue identification</i></td><td>No. 87</td></tr> <tr> <td><i>Other citation details</i></td><td>Data for paper included in supplement SIRGAS reference frame realization SIR11P01.</td></tr> </table>	<i>Title</i>	Recent activities of the IGS Regional Network Associate Analysis Centre for SIRGAS (IGS RNAAC SIR)	<i>Author</i>	L. Sanchez, M. Seitz	<i>Publisher</i>	Deutsches Geodaetisches Forschungsinstitut, Munich, Germany, PANGAEA	<i>Publication date</i>	2011	<i>Series/Journal name</i>	DGFI Report	<i>Issue identification</i>	No. 87	<i>Other citation details</i>	Data for paper included in supplement SIRGAS reference frame realization SIR11P01.		
<i>Title</i>	Recent activities of the IGS Regional Network Associate Analysis Centre for SIRGAS (IGS RNAAC SIR)																
<i>Author</i>	L. Sanchez, M. Seitz																
<i>Publisher</i>	Deutsches Geodaetisches Forschungsinstitut, Munich, Germany, PANGAEA																
<i>Publication date</i>	2011																
<i>Series/Journal name</i>	DGFI Report																
<i>Issue identification</i>	No. 87																
<i>Other citation details</i>	Data for paper included in supplement SIRGAS reference frame realization SIR11P01.																
<i>Data source</i>	ISO Geodetic Registry																
<i>Remarks</i>	Replaces SIR10P01. Replaced by SIR13P01. Last multi-year solution without the effects of the El Maule earthquake in February 2010.																
<i>Anchor definition</i>	Realized by a frame of 230 continuously operating stations using GPS observations from January 2000 to April 2011 and aligned to ITRF2008 at epoch 2005.0. GPS data from January 2000 to November 2006 reprocessed using the first reprocessing campaign products (IG1) of the International GNSS Service and absolute phase centre calibrations referring to the IGS05/IGb05 reference frame. Velocity model VEMOS2009 used to propagate coordinates from an arbitrary epoch to the 2005.0 reference epoch.																
<i>Release date</i>	2011																

<i>Coordinate Reference Epoch</i>	2005.0
<i>Scope</i>	Spatial referencing
<i>Ellipsoid</i>	GRS 1980
<i>Prime Meridian</i>	Greenwich

## Extent

<i>Description</i>	<b>South America - onshore and offshore. Central America - onshore and offshore. Mexico - onshore and offshore.</b>		
<i>Geographic Bounding Box</i>	<i>West-bound longitude</i>	-122.19	
	<i>North-bound latitude</i>	32.72	
	<i>East-bound longitude</i>	-25.28	
	<i>South-bound latitude</i>	-59.87	

# ISO Geodetic Registry

<i>Item class</i>	Ellipsoid														
<i>Name</i>	<b>GRS 1980</b>														
<i>Item status</i>	VALID														
<i>Identifier</i>	27														
<i>Alias</i>	Geodetic Reference System 1980														
<i>Alias</i>	GRS1980														
<i>Alias</i>	IAG GRS80														
<i>Alias</i>	International 1979														
<i>Alias</i>	GRS80														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Geodetic Reference System 1980</td></tr> <tr> <td><i>Author</i></td><td>H. Moritz</td></tr> <tr> <td><i>Publisher</i></td><td>Springer International Publishing</td></tr> <tr> <td><i>Publication date</i></td><td>2003-03</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Journal of Geodesy</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 74, No. 1</td></tr> <tr> <td><i>Page</i></td><td>128–162</td></tr> </table>	<i>Title</i>	Geodetic Reference System 1980	<i>Author</i>	H. Moritz	<i>Publisher</i>	Springer International Publishing	<i>Publication date</i>	2003-03	<i>Series/Journal name</i>	Journal of Geodesy	<i>Issue identification</i>	Volume 74, No. 1	<i>Page</i>	128–162
<i>Title</i>	Geodetic Reference System 1980														
<i>Author</i>	H. Moritz														
<i>Publisher</i>	Springer International Publishing														
<i>Publication date</i>	2003-03														
<i>Series/Journal name</i>	Journal of Geodesy														
<i>Issue identification</i>	Volume 74, No. 1														
<i>Page</i>	128–162														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Geodetic Reference System 1980</td></tr> <tr> <td><i>Author</i></td><td>H. Moritz</td></tr> <tr> <td><i>Publisher</i></td><td>International Association of Geodesy</td></tr> <tr> <td><i>Publication date</i></td><td>1984</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Bulletin Geodesique</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 58, No. 3</td></tr> <tr> <td><i>Page</i></td><td>395-405</td></tr> </table>	<i>Title</i>	Geodetic Reference System 1980	<i>Author</i>	H. Moritz	<i>Publisher</i>	International Association of Geodesy	<i>Publication date</i>	1984	<i>Series/Journal name</i>	Bulletin Geodesique	<i>Issue identification</i>	Volume 58, No. 3	<i>Page</i>	395-405
<i>Title</i>	Geodetic Reference System 1980														
<i>Author</i>	H. Moritz														
<i>Publisher</i>	International Association of Geodesy														
<i>Publication date</i>	1984														
<i>Series/Journal name</i>	Bulletin Geodesique														
<i>Issue identification</i>	Volume 58, No. 3														
<i>Page</i>	395-405														
<i>Data source</i>	ISO Geodetic Registry														
<i>Remarks</i>	Adopted by IUGG 1979 Canberra. Inverse flattening is derived from geocentric gravitational constant $GM = 3986005e8 \text{ m}^3/\text{s}^2$ , dynamic form factor $J_2 = 108263e-8$ and Earth's angular velocity = $7292115e-11 \text{ rad/s}$ .														
<i>Semi-major axis</i>	6378137.0 m														
<i>Inverse flattening</i>	298.257222101 m														

# ISO Geodetic Registry

<i>Item class</i>	PrimeMeridian	
<i>Name</i>	<b>Greenwich</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	25	
<i>Alias</i>	Zero meridian	
<i>Information source</i>	<i>Title</i>	Why the Greenwich meridian moved
	<i>Author</i>	S. Malys, J.H. Seago, N.K. Pavlis, P.K. Seidelmann, G.H. Kaplan
	<i>Publisher</i>	Springer International Publishing
	<i>Publication date</i>	2015-12
	<i>Series/Journal name</i>	Journal of Geodesy
	<i>Issue identification</i>	Volume 89, No. 12
	<i>Page</i>	1263–1272
<i>Information source</i>	<i>Title</i>	IERS Conventions (2010)
	<i>Author</i>	G. Petit, B.J. Luzum (eds)
	<i>Publisher</i>	Verlag des Bundesamts für Kartographie und Geodäsie
	<i>Publication date</i>	2010
	<i>Edition date</i>	
	<i>Series/Journal name</i>	IERS Technical Notes
	<i>Issue identification</i>	36.0
<i>Data source</i>	<i>Other citation details</i>	ISSN: 1019-4568
	ISO Geodetic Registry	
<i>Greenwich longitude</i>	0.0 °	

# ISO Geodetic Registry

<i>Item class</i>	EllipsoidalCS	
<i>Name</i>	<b>Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height. Orientations: north, east, up. UoM: degree, degree, metre.</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	46	
<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)
	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Used in geographic 3D coordinate reference systems. Horizontal coordinates referenced to this CS are in degrees. Any degree representation (e.g. DMSH, decimal, etc.) may be used but that used must be declared for the user.	

## Axes

<i>Item class</i>	CoordinateSystemAxis	
<i>Name</i>	<b>Geodetic latitude</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	38	
<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)
	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Used in geographic 2D and geographic 3D coordinate reference systems.	
<i>Abbreviation</i>	Lat	
<i>Direction</i>	north	
<i>Unit</i>	degree (supplier to define representation)	

  

<i>Item class</i>	CoordinateSystemAxis	
<i>Name</i>	<b>Geodetic longitude</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	34	
<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)

	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Used in geographic 2D and geographic 3D coordinate reference systems.	
<i>Abbreviation</i>	Lon	
<i>Direction</i>	east	
<i>Unit</i>	degree (supplier to define representation)	

  

<i>Item class</i>	CoordinateSystemAxis	
<i>Name</i>	<b>Ellipsoidal height</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	36	
<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)
	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Used only as part of an ellipsoidal 3D coordinate system in a geographic 3D coordinate reference system, never on its own.	
<i>Abbreviation</i>	h	
<i>Direction</i>	up	
<i>Unit</i>	metre	