

EVENTO DE NETWORKING

## HEALTHCARE & PHOTONICS

TECNOLOGIAS FOTÓNICAS APLICADAS AL SECTOR HEALTHCARE

**26 MARZO/14**

09.45h-17.00h  
**Parc Audiovisual  
de Catalunya**  
Carretera BV-1274,  
Km.1, 08225 Terrassa  
(Barcelona)

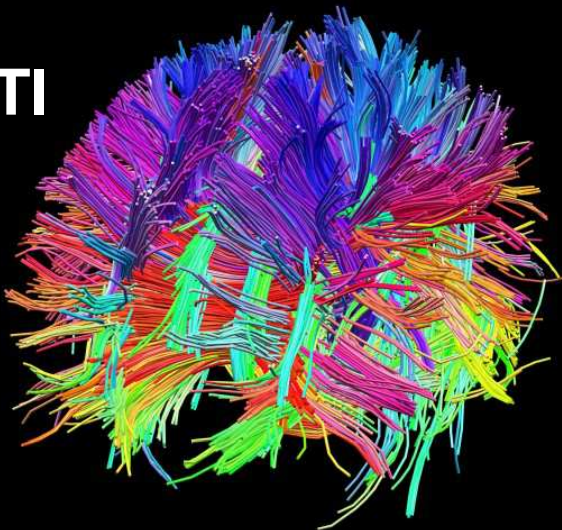


Parc Sanitari  
**Sant  
Joan  
de Déu**

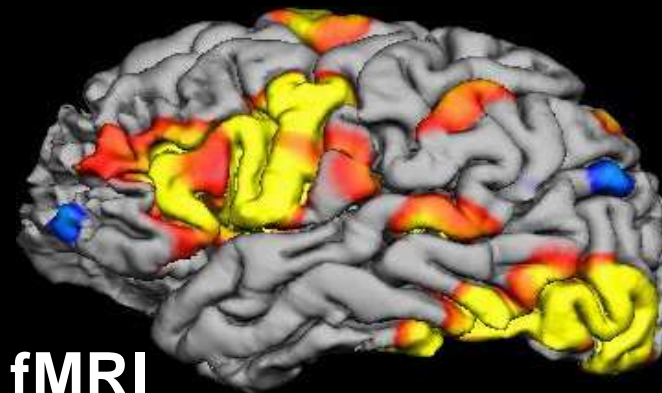


**“Atlas del cerebro español /  
Atlas de territorios arteriales  
del neonato”**

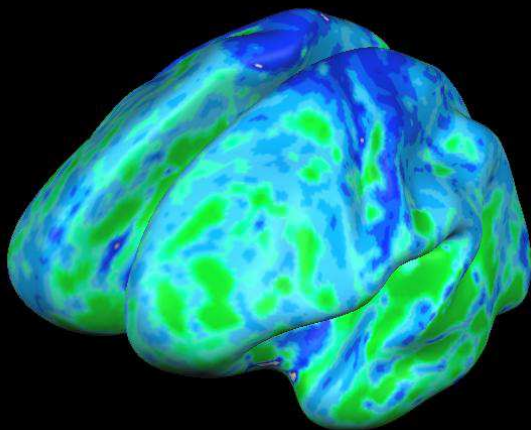
DTI



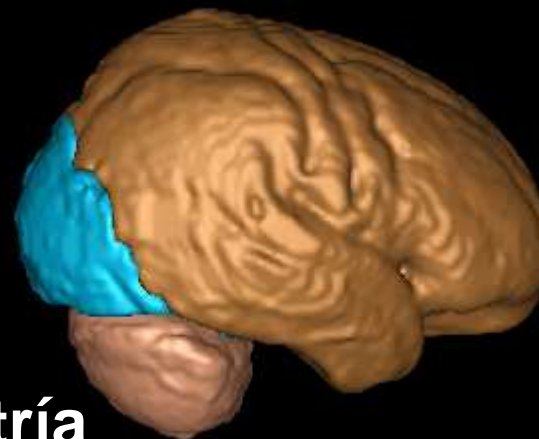
fMRI



grosor cortical

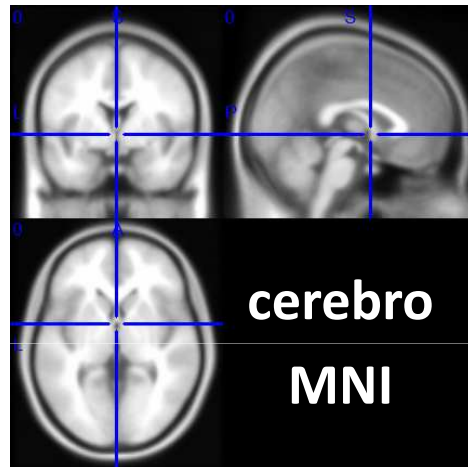


volumetría

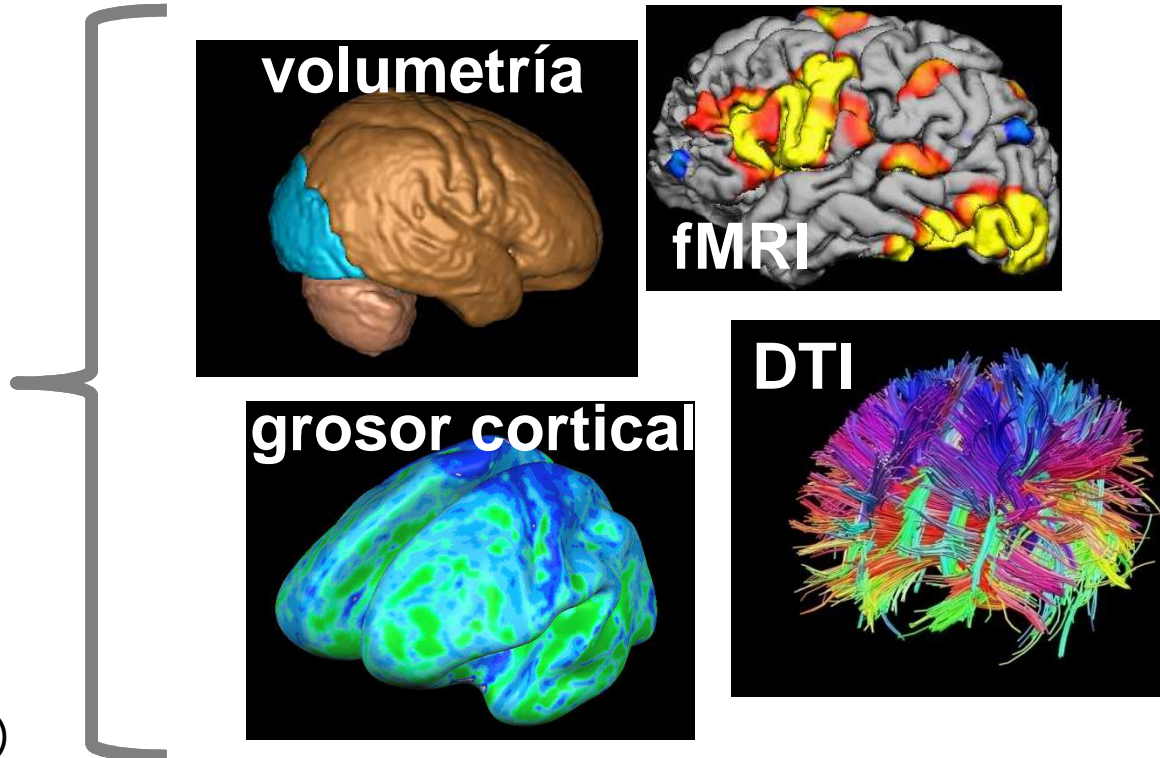


etc...

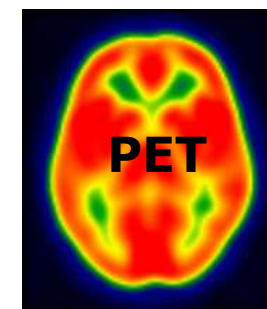
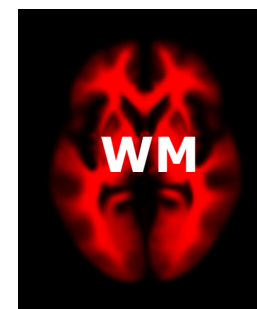
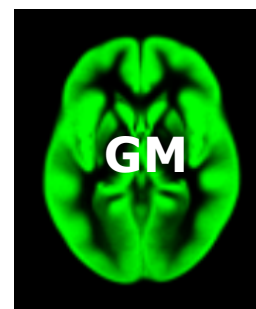
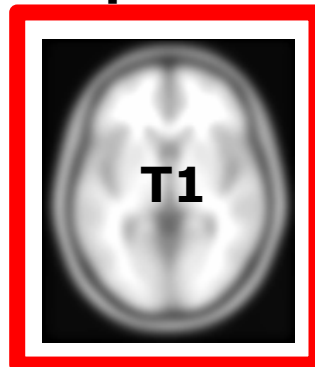
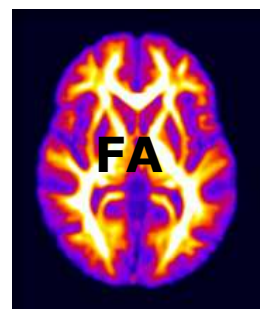
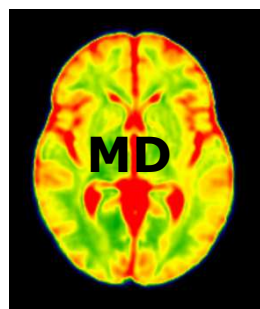
## Espacio estándar de referencia...



Coordenadas MNI:  
amígdala L en (-24,2,-17)



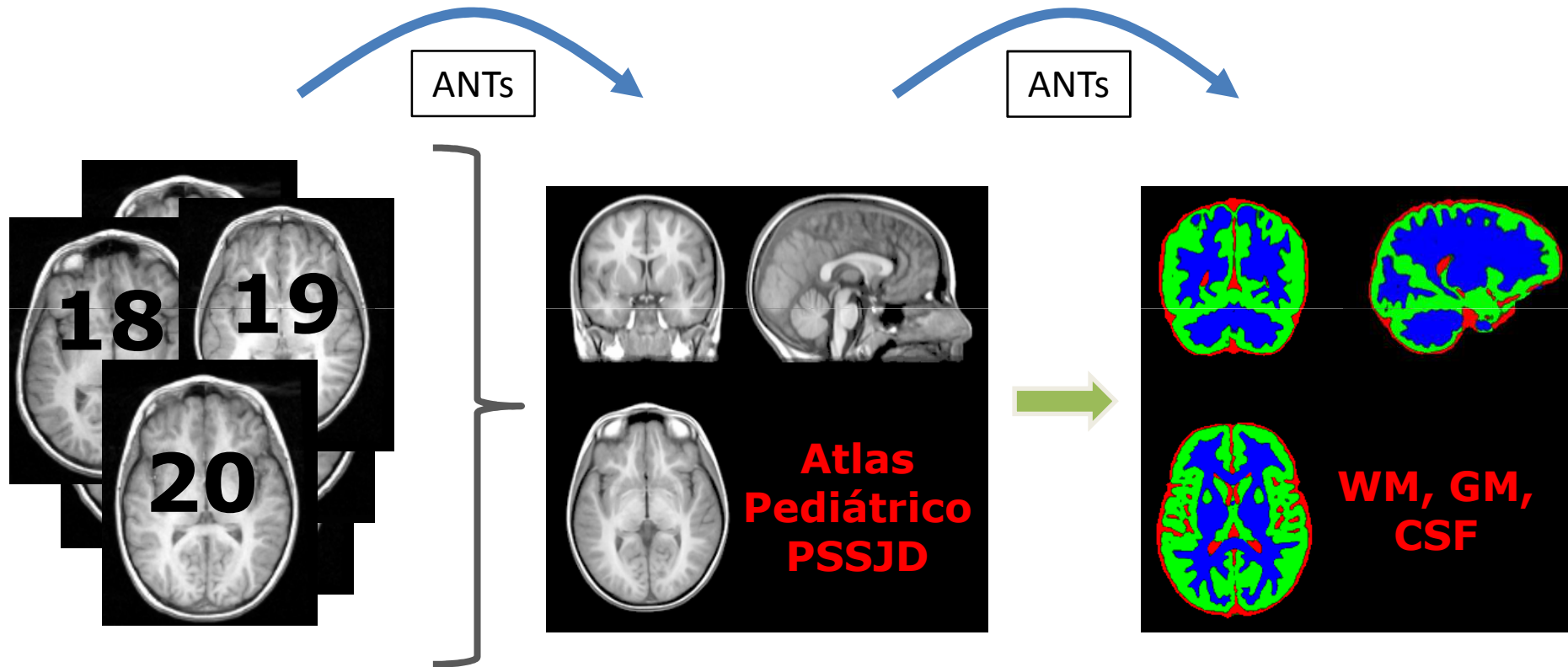
... del que se derivan plantillas estándar de procesamiento



## **Problemática cerebro estándar MNI**

- **Población caucàsica, 78% homes, edad: 23.4 +/- 4.1**
- **Poca resolució (creado hace 30 años)**
- **Se utiliza para describir poblaciones muy diferentes (adultos mayores, mujeres, otras etnias, otras edades...)**
- **Sus dimensiones no son representativas (es demasiado ancho, por ejemplo)**
- **Genera sesgos si la muestra estudiada no se parece a la original del MNI**

## Una posible solución:



<http://picsl.upenn.edu/software/ants/>


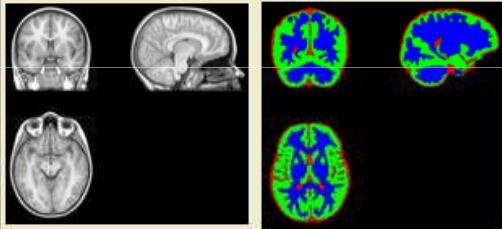

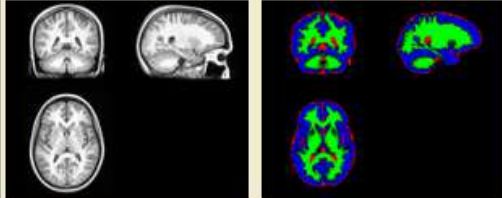
## Population-Specific Templates at PSSJD

Creation of standard brain atlases that accurately represent a certain population is a desirable approach that has only recently been embraced in neuroimaging studies (see for example [1]). The widely used Montreal Neurological Institute (MNI) template brain is made up of all right handed Caucasian subjects, 78% males, age 23.4 +/- 4.1 [2]; nevertheless, it is commonly used as a standard localization space in women-only studies or for significantly younger or older groups.

An ongoing project in our institution aims to create population-specific brain templates of various Spanish age groups. This allows better normalization in neuroimaging studies, specially when subjects in a sample differ in age/gender/size from the broadly used MNI brain template.

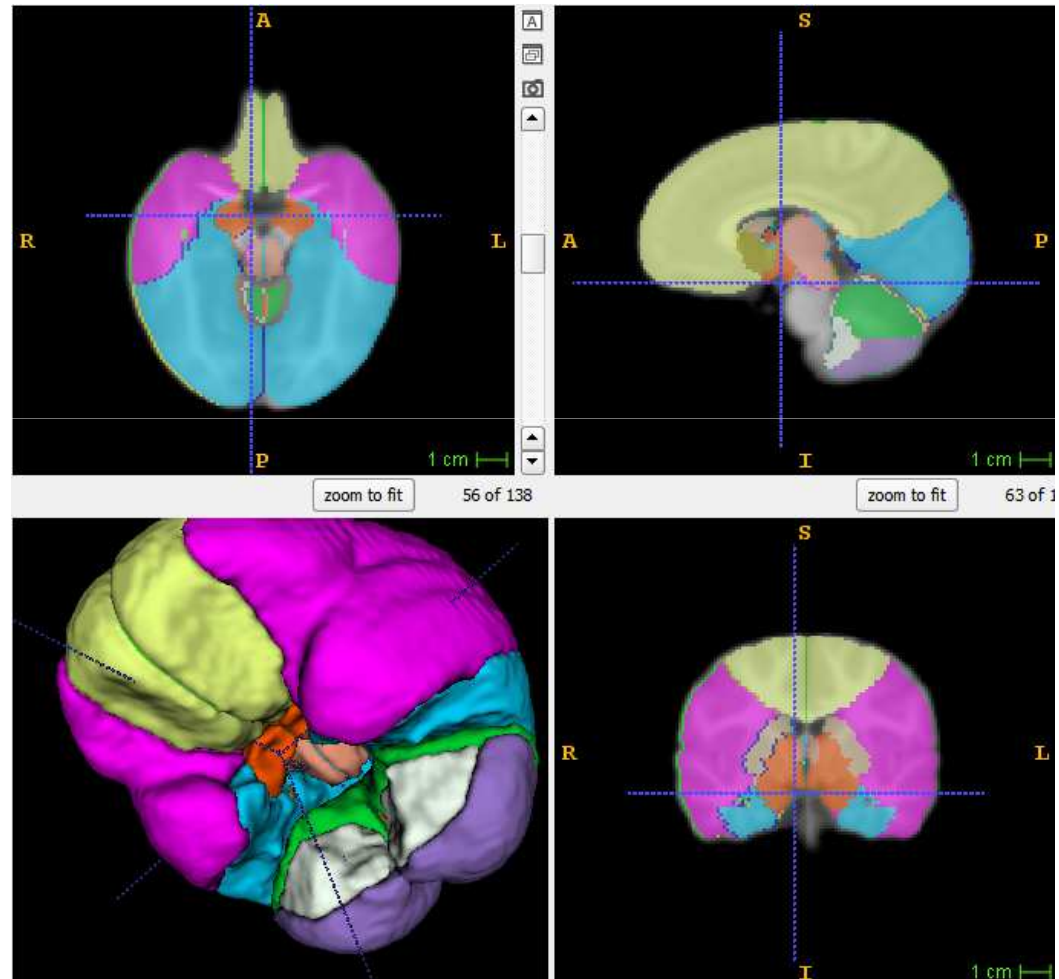
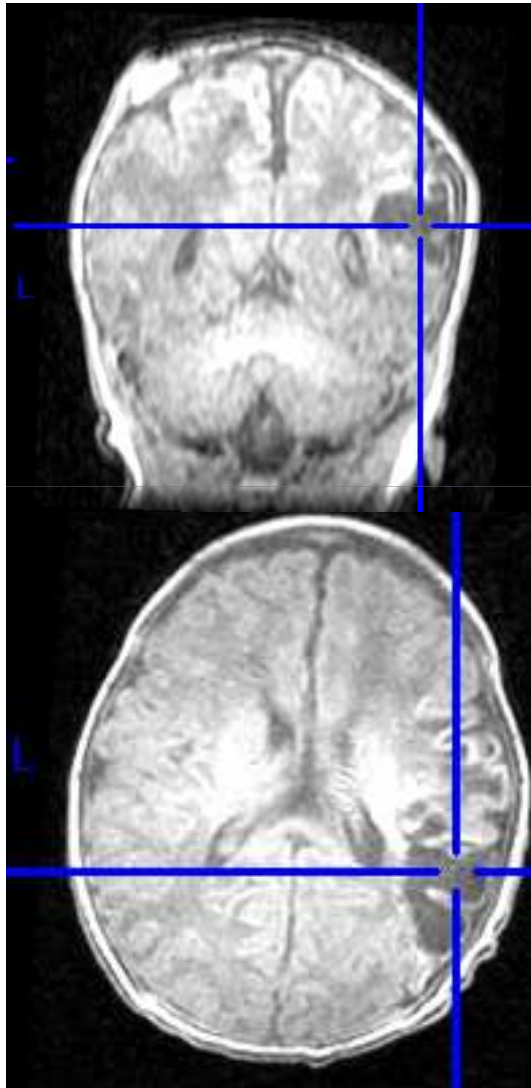
You may access the templates directory by emailing [cstephanotto@pssjd.org](mailto:cstephanotto@pssjd.org) with the subject 'Template Request', an automated response will provide the download link.

### Available Templates:

Template name	Characteristics	Preview
<p>PSSJD_pediatric</p> <p>Structural template presented in this <a href="#">poster</a>.</p> <p> Creative Commons licensed</p>	<p>Representative sample of the Spanish pediatric population made with 12 brain scans (T1) of healthy individuals aged <b>8.1 +/- 1.7</b> (50% female). Template was created with the ANTs software [2]. Tissue probability maps were obtained with the Atropos tool within ANTs.</p> <p>Files:</p> <ul style="list-style-type: none"> <li>- PSSJD_pediatric_template.nii.gz: structural T1 template</li> <li>- segmented_white.nii.gz, segmented_grey.nii.gz, segmented_csf.nii.gz: segmentation results</li> <li>- pediatric_white_prior.nii.gz, pediatric_grey_prior.nii.gz, pediatric_csf_prior.nii.gz: tissue probability maps (8x8x8 FWHM-smoothed) to be used as priors with SPM or other analysis software</li> </ul>	
<p>PSSJD_teen</p> <p>Presented in this <a href="#">poster</a>, together with the segmentation of the pediatric template.</p> <p> Creative Commons licensed</p>	<p>Representative sample of the Spanish adolescent population made with 12 brain scans (T1) of healthy individuals aged <b>14.9 +/- 2.0</b> (50% female). Template was created with the ANTs software [2]. Tissue probability maps were obtained with the Atropos tool within ANTs.</p> <p>Files:</p> <ul style="list-style-type: none"> <li>- PSSJD_teen_template.nii.gz: structural T1 template</li> <li>- teen_white.nii.gz, teen_grey.nii.gz, teen_csf.nii.gz: segmentation results</li> <li>- teen_white_prior.nii.gz, teen_grey_prior.nii.gz, teen_csf_prior.nii.gz: tissue probability maps (8x8x8 FWHM-smoothed) to be used as priors with SPM or other analysis software</li> </ul>	

<http://goo.gl/2JiV9Z>

## Clasificación del infarto neonatal



[cstephanotto@pssjd.org](mailto:cstephanotto@pssjd.org)