

BrainVoyager QX

FMRI/MRG 画像解析 Software Cambridge Research Systems 社

« 特徴詳細 2 »

■ Surface Module Features

Mesh Manipulation & Surface Reconstruction

- deformable models で頭部を再構築（例 sphere）
- 白質・灰白質境界と脳軟膜に沿って分割した脳皮質の自動ポリゴン・メッシュの再構築
- 脳皮質 surface の位相エラーの自動補正
- 複数の surface 画像の表示と生成（例 脳皮質半球と頭部を透過した画像で構成された場面）
- メッシュの相互作用の移動、ローテーション、ズーム
- 凹凸面のひずみ、溝の深度、statistical map のカラー化
- 迅速に mesh manipulations するため、ポリゴン・メッシュを Triangle strip に生成
- ポリゴン・メッシュを.DXF、.VMRL、.STL ファイルとして出力

Surface Slicing, Cortex Inflation & Unfolding

- 頭部と脳メッシュを通して相互作用する real-time slicing
- 複数切断面の結合表示
- 再構築された大脳半球皮質の自動膨張、切断、扁平
- 様々な変形力 (deformation forces) のパラメータの明示
- morphed のメッシュ（例 flattened cortex）とオリジナルのメッシュ（例 folded cortex）の3D 座標間の参照
- 膨張または扁平した surface の statistical 3D map の表示
- 速やかにアクセスし、あるゆる surface 断片の time course データを表示
- surface を基本とした inter-subject 配列

Display Utilities

- statistical surfacemap あるいは ICA component map のカラーコードを同時表示
- point model、wire frame、shaded surface のスタイルでメッシュを表現
- 選択したメッシュの透明 rendering
- MEG/EEG の複数 dipole model と波形を可視化
- メッシュのカラーと複数光源の明示
- Scene antialiasing (見かけ上の解像度を上げる) : scene animation
- scene viewing condition を保存または読み込む
- fMRI と MEG によるスライスとメッシュ動画の生成と表示
- 8-bit PNG/GIF/BMP あるいは 24-bit BMP/JPEG ファイルとして 2D または 3D 画像で出力
- AVI/MNG 動画ファイルでダイナミック・プロセッサに出力

System Requirements

BrainVoyager QX 2000 の実行に必要な環境

- Windows 98 SE 以降の OS
- Intel Pentium II processor (少なくとも 300 MHz) あるいは AMD Athlon processor
- 128 MB メモリ
- Open-GL accelerating グラフィックス・カード
- 20 GB ハードディスク
- 19" モニター
- 複数の USB port

BrainVoyager QX 2000 の最適な動作環境

- Windows XP, Windows 2000 あるいは Windows NT 4
- Dual Intel Pentium 4 または Pentium III processors
- 512 MB メモリ
- NVIDIA GeForce チップセットを基本とした 32MB のグラフィクス・メモリー付きの Open-GL accelerating グラフィックス・カード

Further Information

BrainVoyager QX has been developed by [Rainer Goebel](#) and [Brain Innovation B.V.](#) since 1996 and is distributed and supported by Cambridge Research Systems in the UK

Useful Information

Documentation

BrainVoyager QX 2000 – [Getting Started Guide](#) (12 MB Zip archive. Contains 120 MB Adobe Acrobat document with high resolution images, optimized for high quality printing)

FAQs

- BrainVoyager QX 2000 – [Technical Support FAQ](#)

Video Collection

- Cortex Inflation (to sphere) – 2 s AVI movie (5 MB)
- Distortion Correction – 1 s AVI movie (3.5 MB)
- Hemisphere Inflation (out of head) – 3 s AVI movie (8 MB)
- Inflation – 3 s AVI movie (3.55 MB)
- Mesh Morphing (to head) – 4 s AVI movie (2 MB)
- Mesh Morphing (to sliced head) – 8 s AVI movie (7.5 MB)
- Occipital Activation (to flowfield movie) – 3 s AVI movie (3.5 MB)
- Rotation, Slicing, Colour-coded Lobes – 13 s AVI movie (11 MB)

Publications

- Kriegeskorte, N. & Goebel, R. (2001). An efficient algorithm for topologically correct segmentation of the cortical sheet in anatomical MR volumes. *NeuroImage*, 14, 329–346.
- Vaughan, J.T., Garwood, M., Collins, C.M., Liu, W., DelaBarre, L., Adrainy, G., Andersen, P., Merkle, H., Goebel, R., Smith, M.B. & Ugurbil, K. (2001). 7T vs. 4T: RF power, homogeneity, and signal-to-noise comparison in head images. *Magnetic Resonance in Medicine*, 46, 24–30.
- Goebel, R., Muckli, L., Zanella, F.E., Singer, W. & Stoerig, P. (2001). Sustained extrastriate cortical activation without visual awareness revealed by fMRI studies of hemianopic patients. *Vision Research*, 41, 1459–1474.
- Fries, P., Neuenschwander, S., Engel, A.K., Goebel, R. & Singer, W. (2001). Rapid feature selective neuronal synchronization through correlated latency shifting. *Nature Neuroscience*, 4, 194–200.
- Kleiser, R., Wittsack, J., Niedeggen, M., Goebel, R. & Stoerig, P. (2001). Is V1 necessary for conscious vision in areas of relative cortical blindness? *NeuroImage*, 13, 654–661.
- Di Salle, F., Formisano, E., Seifritz, E., Linden, D.E.J., Scheffler, K., Saulino, C., Tedeschi, G., Zanella, F.E., Pepino, A., Goebel, R., & Marciano, E. (2001). Functional fields in human auditory cortex revealed by time-resolved fMRI without interference of EPI noise. *NeuroImage*, 13, 328–338.
- Brecht, M., Goebel, R., Singer, W. & Engel, A.K. (2001). Synchronization of visual responses in the superior colliculus of awake cats. *NeuroReport*, 12, 43–47.
- Castelo-Branco, M., Goebel, R., Neuenschwander, S. & Singer, W. (2000). Neural synchrony correlates with transparency rules constraining visual surface segregation. *Nature*, 408, 685–689. Kiebel, S., Goebel, R. & Friston, K. (2000).
- Characterization of functional observations using anatomically informed spatiotemporal basis functions, *NeuroImage*, 11, 656–667. Trojano, L., Grossi, D., Linden, D.E.J., Formisano, E., Hacker, H., Zanella, F.E., Goebel, R. & Di Salle, F. (2000).
- Matching two imagined clocks: The functional anatomy of spatial analysis in the absence of visual stimulation. *Cerebral Cortex*, 10, 473–481.
- Dierks, T., Linden, D.E.J., Jandl, M., Formisano, E., Goebel, R., Lanfermann, H., Singer, W. (1999). Activation of Heschl's gyrus during auditory hallucinations. *Neuron*, 22, 615–621.
- Di Salle, F., Formisano, E., Linden, D., Goebel, R., Bonavita, S., Pepino, A., Smaltino, F. & Tedeschi, G. (1999). Exploring brain function with Magnetic Resonance Imaging. *European Journal of Radiology*, 30, 84–94.
- Linden, D.E.J., Kallenbach, U., Heinecke, A., Singer, W., & Goebel, R. (1999). The myth of upright vision. A psychophysical and functional imaging study of adaptation to inverting spectacles. *Perception*, 28, 469–481.
- Linden, D.E.J., Prvulovic, D., Formisano, E., Vollinger, M., Zanella, F.E., Goebel, R. and Dierks, T. (1999). The functional neuroanatomy of target detection: An fMRI study of visual and auditory oddball tasks. *Cerebral Cortex*, 9, 815–823.
- Dierks, T., Linden, D.E.J., Hertel, A., Gunther, T., Lanfermann, H., Niesen, A., Frolich, L., Zanella, F.E., Hor, G., Goebel, R., Maurer, K. (1998). Multimodal imaging of residual function and compensatory resource allocation in cortical atrophy: a case study of parietal lobe function in a patient with Huntington's disease. *Psychiatry Research*, 84, 27–35.
- Goebel, R., Khorram-Sefat, D., Muckli, L., Hacker, H. and Singer, W. (1998) The constructive nature of vision: Direct evidence from fMRI studies of apparent motion and motion imagery. *The European Journal of Neuroscience*, 10, 1563–1573.
- Goebel, R., Linden, D. E. J., Lanfermann, H., Zanella, F. E. and Singer, W. (1998). Functional imaging of mirror and inverse reading reveals separate coactivated networks for oculomotion and spatial transformations. *NeuroReport*, 9(4), 713–719.
- Schmidt, K. E., Goebel, R., Lowel, S., & Singer, W. (1997). The perceptual grouping criterion of colinearity is reflected by anisotropies of connections in primary visual cortex. *European Journal of Neuroscience*, 9, 1083–1089.