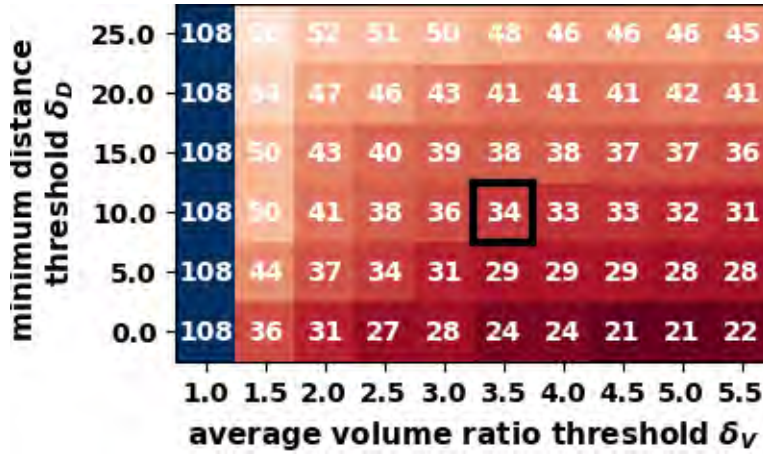
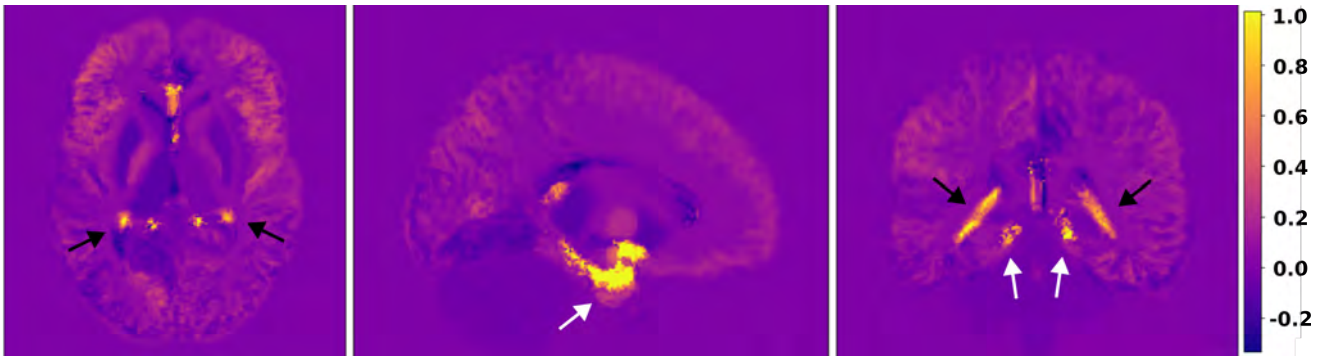


# Label merge-and-split: A graph-colouring approach for memory-efficient brain parcellation

Supplementary Material



**Figure A:** Number of effective labels resulting from the graph coloring algorithm depending on the minimum distance and average volume ratio thresholds for the AOMIC dataset. The chosen values are highlighted with a black box.



**Figure B:** Earlier results without volume ratio threshold showed reduced segmentation accuracy of small structures due to large class imbalance within merged label groups. Regions where the merged model performed worse/better are yellow/blue. Small structures (choroid plexus: black arrows; entorhinal cortex: white arrows) that were merged with much larger structures were segmented less accurately. The average volume ratio threshold was introduced to mitigate class imbalance within merged label groups.

**Table A:** Additional metrics for all experiments: relative volume error (RVE) and Hausdorff distance to complement the Dice Similarity Coefficient of Table 1 of the main paper. Bold numbers indicate the better value when comparing merged and original model.

	RVE [%]			Hausdorff [mm]		
	AOMIC	IXI	Mindboggle42	AOMIC	IXI	Mindboggle42
AOMIC <sub>orig</sub>	<b>5.7 (7.9)</b>	<b>10.1 (10.3)</b>	<b>16.0 (15.1)</b>	<b>7.89 (6.07)</b>	<b>8.46 (6.31)</b>	<b>9.19 (6.92)</b>
AOMIC <sub>merged</sub>	5.8 (7.9)	10.6 (11.2)	16.4 (15.6)	7.99 (6.22)	8.78 (6.76)	9.32 (7.74)
IXI <sub>orig</sub>	8.2 (8.9)	5.4 (7.5)	16.5 (15.7)	<b>7.94 (5.85)</b>	<b>7.92 (5.77)</b>	<b>8.92 (6.84)</b>
IXI <sub>merged</sub>	<b>7.4 (8.5)</b>	<b>5.2 (7.1)</b>	<b>16.0 (15.4)</b>	8.07 (6.25)	8.1 (5.97)	8.94 (7.02)

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