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| Title: | The SAMI Galaxy Survey: the cluster redshift survey, target selection and cluster properties |
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| Abstract: | We describe the selection of galaxies targeted in eight low-redshift clusters (APMCC0917, A168, A4038, EDCC442, A3880, A2399, A119 and A85; 0.029 < z < 0.058) as part of the Sydney-AAO Multi-Object Integral field spectrograph Galaxy Survey (SAMI-GS). We have conducted a redshift survey of these clusters using the AAOmega multi-object spectrograph on the 3.9-m Anglo-Australian Telescope. The redshift survey is used to determine cluster membership and to characterize the dynamical properties of the clusters. In combination with existing data, the survey resulted in 21 257 reliable redshift measurements and 2899 confirmed cluster member galaxies. Our redshift catalogue has a high spectroscopic completeness (∼94 per cent) for rpetro ≤ 19.4 and cluster-centric distances R < 2R200. We use the confirmed cluster member positions and redshifts to determine cluster velocity dispersion, R200, virial and caustic masses, as well as cluster structure. The clusters have virial masses 14.25 ≤ log(M200/M⊙) ≤ 15.19. The cluster sample exhibits a range of dynamical states, from relatively relaxed-appearing systems, to clusters with strong indications of merger-related substructure. Aperture- and point spread function matched photometry are derived from Sloan Digital Sky Survey and VLT Survey Telescope/ATLAS imaging and used to estimate stellar masses. These estimates, in combination with the redshifts, are used to define the input target catalogue for the cluster portion of the SAMI-GS. The primary SAMI-GS cluster targets have R <R200, velocities \|vpec\| < 3.5σ200 and stellar masses 9.5≤log(M∗approx/M⊙)≤12. Finally, we give an update on the SAMI-GS progress for the cluster regions. |
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