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A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE). The effects of ram pressure stripping.

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ABSTRACT

Context. Once a galaxy has entered a galaxy cluster, its evolution will change, sometimes drastically. Multiple gravitational interactions together with the influence of the cluster potential can remove the stellar and gaseous content of its outer disk (galaxy harassment). The rapid motion of the galaxy within the cluster atmosphere, the hot and tenuous intracluster medium (ICM), causes the removal of the outer gas disk via ram pressure. In contrast to galaxy harassment, ram pressure stripping does not affect the stellar content of the galaxy. Spiral galaxies that underwent or are undergoing ram pressure stripping show a truncated gas disk together with a symmetric stellar disk If the interaction is ongoing, a gas tail mainly detected in Hi is present. The gas truncation radius is set by the galaxy's closest passage to the cluster center. If peak ram pressure occurred more than 400–500 Myr ago, the gas tails have disappeared and the truncated gas disk has become symmetric again.
Aims.
Methods.
Results.
Conclusions.

Key words. galaxies: fundamental parameters; galaxies: kinematics and dynamics; galaxies: spiral structure; galaxies: cold interstellar medium

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