

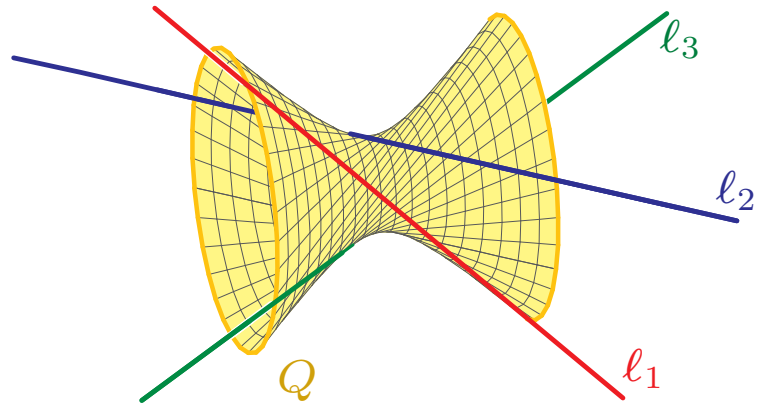
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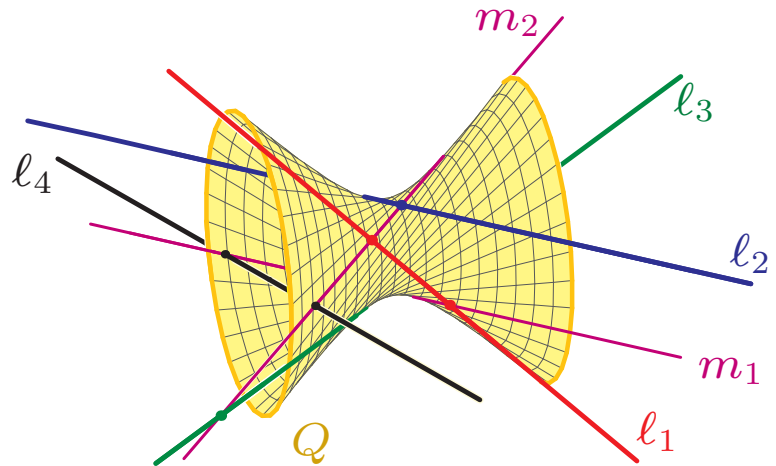
The lines  $\ell_1, \ell_2, \ell_3$  lie on a unique hyperboloid  $Q$  of one sheet, and the lines that meet  $\ell_1, \ell_2, \ell_3$  form one ruling of  $Q$ .



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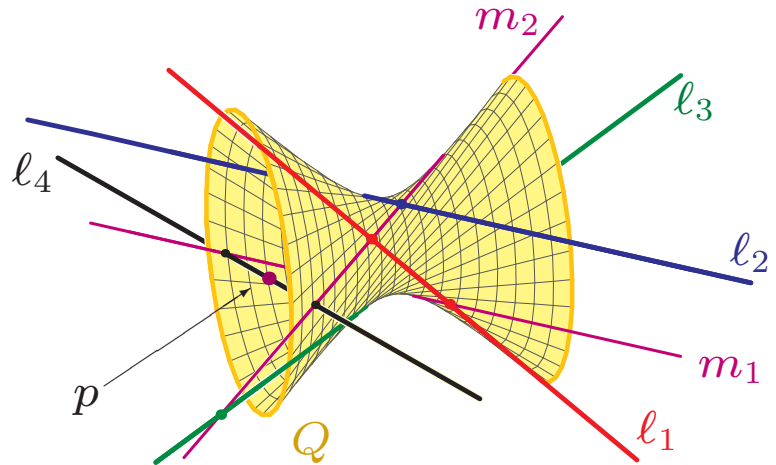


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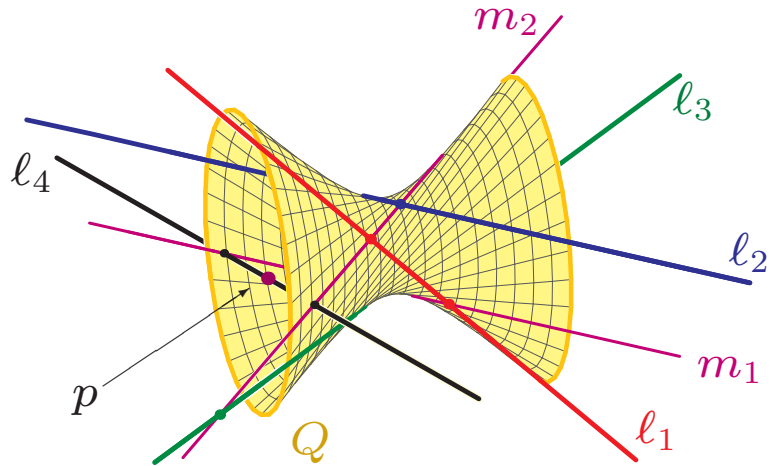


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This shows that

The Galois group of the problem of four lines is the symmetric group  $\mathcal{S}_2$ .