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| cases | doc_1            |  | doc_2            |  | decision   | id  |
|       |                  |  |                  |  | DUPLICATES | 320 |
|       | authors          | <ul style="list-style-type: none"><li>E.V. Ferapontov</li></ul>  | authors          | <ul style="list-style-type: none"><li>E. V. Ferapontov</li></ul>   |            |     |
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|       | id               | id-7149588685851398738   | id               | id8229141167241386869  |            |     |
|       | abstract         | We introduce two basic invariant forms which define generic surface in 3-space uniquely up to Lie sphere equivalence. Two particularly interesting classes of surfaces associated with these invariants are considered, namely, the Lie-minimal surfaces and the diagonally-cyclidic surfaces. For diagonally-cyclidic surfaces we derive the stationary modified Veselov-Novikov equation, whose role in the theory of these surfaces is similar to that of Calapso's equation in the theory of isothermic surfaces. Since Calapso's equation itself turns out to be related to the stationary Davey-Stewartson equation, these results shed some new light on differential geometry of the stationary Davey-Stewartson hierarchy. Diagonally-cyclidic surfaces are the natural Lie sphere analogs of the isothermally-asymptotic surfaces in projective differential geometry for which we also derive the stationary modified Veselov-Novikov equation with the different real reduction. Parallels between invariants of surfaces in Lie sphere geometry and reciprocal invariants of hydrodynamic type systems are drawn in the conclusion. | abstract         | We introduce two basic invariant forms which define generic surface in 3-space uniquely up to Lie sphere equivalence. Two particularly interesting classes of surfaces associated with these invariants are considered, namely, the Lie-minimal surfaces and the diagonally-cyclidic surfaces. For diagonally-cyclidic surfaces we derive the stationary modified Veselov-Novikov equation, whose role in the theory of these surfaces is similar to that of Calapso's equation in the theory of isothermic surfaces. Since Calapso's equation itself turns out to be related to the stationary Davey-Stewartson equation, these results shed some new light on differential geometry of the stationary Davey-Stewartson hierarchy. Diagonally-cyclidic surfaces are the natural Lie sphere analogs of the isothermally-asymptotic surfaces in projective differential geometry for which we also derive the stationary modified Veselov-Novikov equation with the different real reduction. Parallels between invariants of surfaces in Lie sphere geometry and reciprocal invariants of hydrodynamic type systems are drawn in the conclusion. |            |     |
|       | versions         |  | versions         |  |            |     |
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