| Geometric Algebra functions | |
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| **Function signature** | **Description: Examples in GA-tests/GA-main.ipynb** |
| GA(domain,symbol,n,pos='', neg = '', order = (1,-1,0), i0=1) | Creates a Geometric Algebra over K='domain' of a linear geometric space of dimension n and signature (r,s,t), r='pos', s='neg', t=n-r-s. The basis of linear space is denoted e_j, where e='symbol' and j runs in the range i0··i0+(n-1), with i0=1 by default. By default the order of this basis is positive vectors first, then negative, and finally null vectors. |
| scalar(x) | Yields the scalar coefficient of the multivector x. |
| dual(x) | In the non-degenerate case, it gives the dual of the multivector x, i.e., x*I, where I is the pseudoscalar (I is the product of the basis elements). |
| hat(x)<br>reverse(x) | These functions give the grade and reverse involutions of the multivector x, respectively. |
| evaluate(f,pos,value) | This function evaluates the coefficients (which may be polynomials) of the multivector f. In other words, it returns ∑ evaluate(f_I,pos,value)e_I. |
| scalar_product(x,y) = x & y | If x and y are multivectors, this function computes its scalar product, namely the natural extension of the scalar product of the linear geometric space to the whole geometric algebra. It is equal to scalar(x*reverse(y)). |
| dot(x,y) = x\|y | Gets the inner product of multivectors x and y. |
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| algebra(domain, T,symbols,i0=1) | Constructs an algebra over D = 'domain' with product table given by the dictionary T, and with bases specified as the list of 'symbols'. |
| nalgebra(domain,T,symbol,n,i0=1,scalar=True) | |