```
>> liaoliang = zeros(3, 3)

liaoliang =

     0     0     0
     0     0     0
     0     0     0

>>
>> liaoliang(1) = 1

liaoliang =

     1     0     0
     0     0     0
     0     0     0

>>
>>
>> liaoliang = quaternionize(liaoliang)

liaoliang =

  3×3 quaternion array


     1 + 0i + 0j + 0k     0 + 0i + 0j + 0k     0 + 0i + 0j + 0k
     0 + 0i + 0j + 0k     0 + 0i + 0j + 0k     0 + 0i + 0j + 0k
     0 + 0i + 0j + 0k     0 + 0i + 0j + 0k     0 + 0i + 0j + 0k

>> liaoliang= tensormultiplication(qfourier_matrix(3), liaoliang, 1);
>> liaoliang= tensormultiplication(qfourier_matrix(3), liaoliang, 2);
>>
>> liaoliang

liaoliang =

  3×3 quaternion array


     1 + 0i + 0j + 0k     1 + 0i + 0j + 0k     1 + 0i + 0j + 0k
     1 + 0i + 0j + 0k     1 + 0i + 0j + 0k     1 + 0i + 0j + 0k
     1 + 0i + 0j + 0k     1 + 0i + 0j + 0k     1 + 0i + 0j + 0k
```