hw9_3

November 24, 2019

Consider the following two matrices. The new matrix B is defined as follows:B = T * A * transpose(T). Evaluate the trace of A and B for different values of and comment on your observation

[9]:
```
A = [1.0,2.0,3.0;
    1.1,2.1,3.1;
    2.5,1.6,3.3]
for theta= -5:5
    T = [cos(theta),sin(theta),0;
        -sin(theta),cos(theta),0;
        0,0,1];
    B = T * A * T';
    disp(trace(A));
    disp(trace(B));
    disp("-------------------------------------");
end
```

```
A =

   1.0000   2.0000   3.0000
   1.1000   2.1000   3.1000
   2.5000   1.6000   3.3000

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For any value of theta, Trace(A)=Trace(B)=6.4