

Exploring complex normal faulting systems through physics-based dynamic rupture modeling

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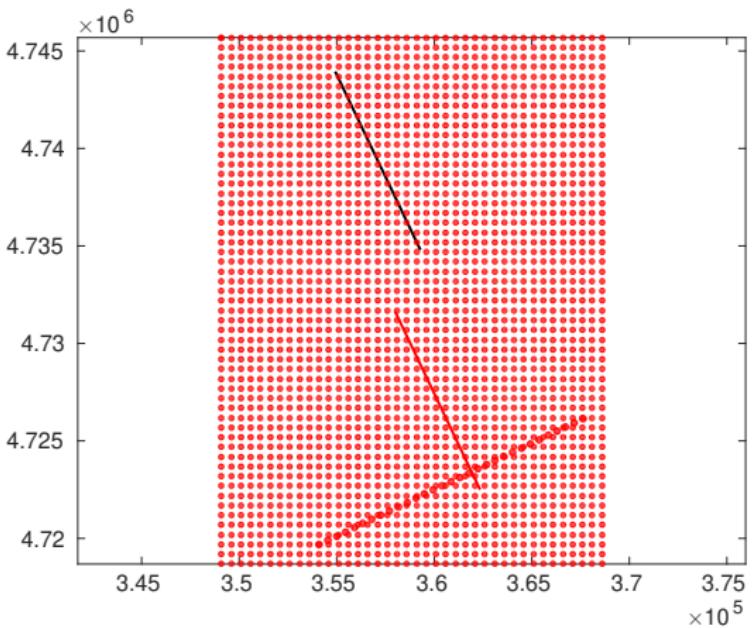
O., Scotti, S., Hok, A.-A. Gabriel and T. Taufiqurrahman

ANR EQTIME Project

May 31, 2022

Outline

Geometry of virtual receivers

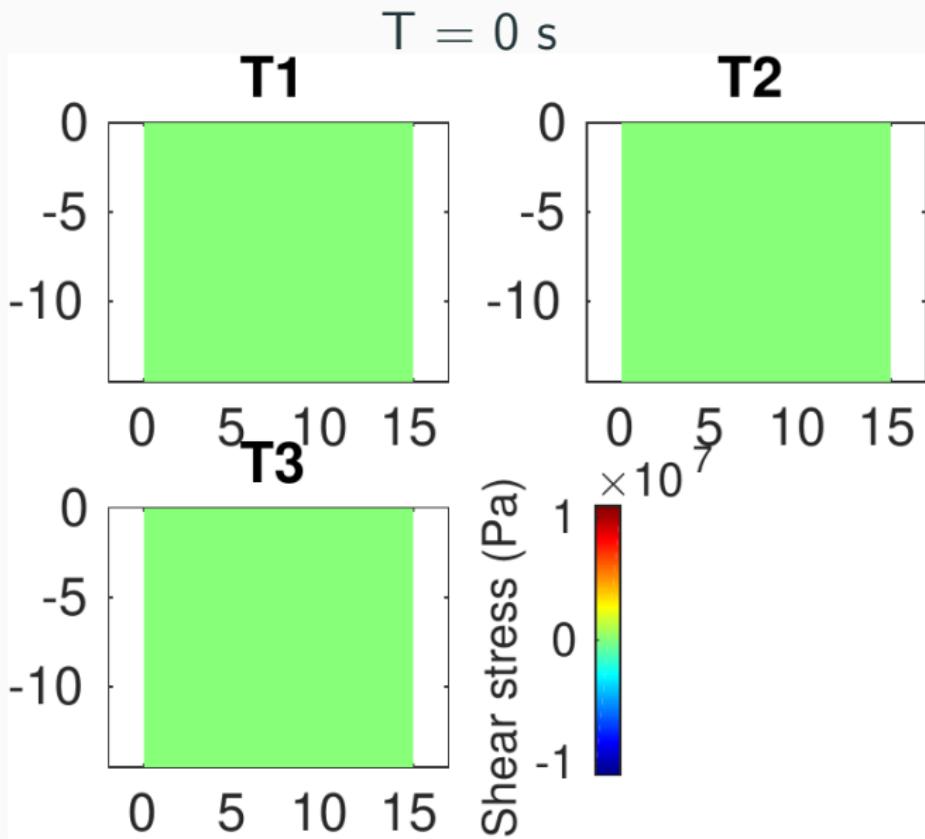


offset=2.5 km gap=1.0 km (JUMP)

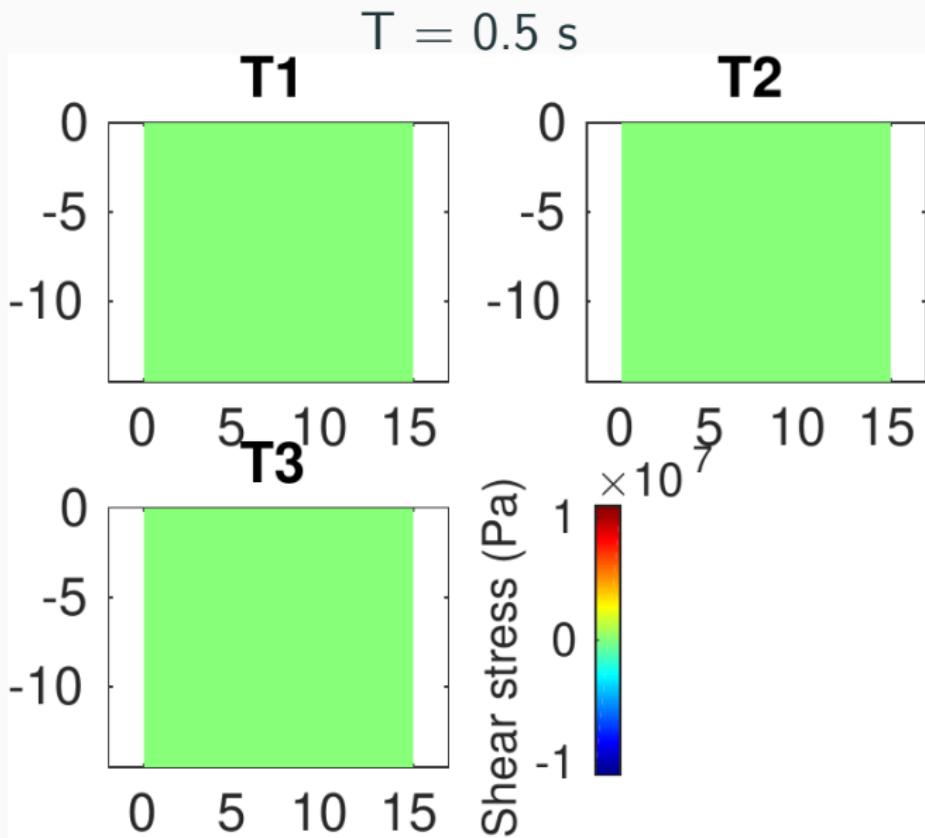
Estimation of shear stress

```
for i=1:nx
    jj = ny;
    for j=1:ny
        s_xx = data_hori(k,2);
        s_yy = data_hori(k,3);
        s_zz = data_hori(k,4);
        s_xy = data_hori(k,5);
        s_yz = data_hori(k,6);
        s_xz = data_hori(k,7);
        sig = [s_xx, s_xy, s_xz; s_xy, s_yy, s_yz; s_xz, s_yz, s_zz];
        t = sig*n;
        tau = t - (dot(n,t))*n;
        t1_h(jj,i) = tau(1);
        t2_h(jj,i) = tau(2);
        t3_h(jj,i) = tau(3);
        u(jj,i) = data_hori(k,8);
        v(jj,i) = data_hori(k,9);
        w(jj,i) = data_hori(k,10);
        jj = jj-1;
        k=k-1;
    end
end
```

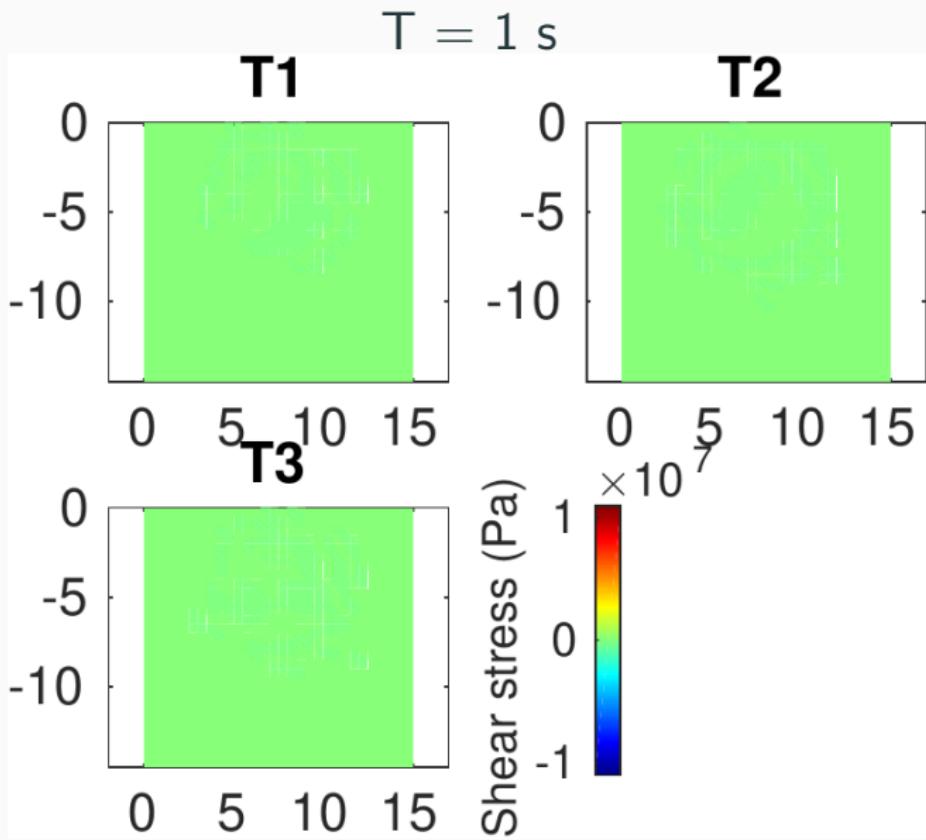
Shear stress



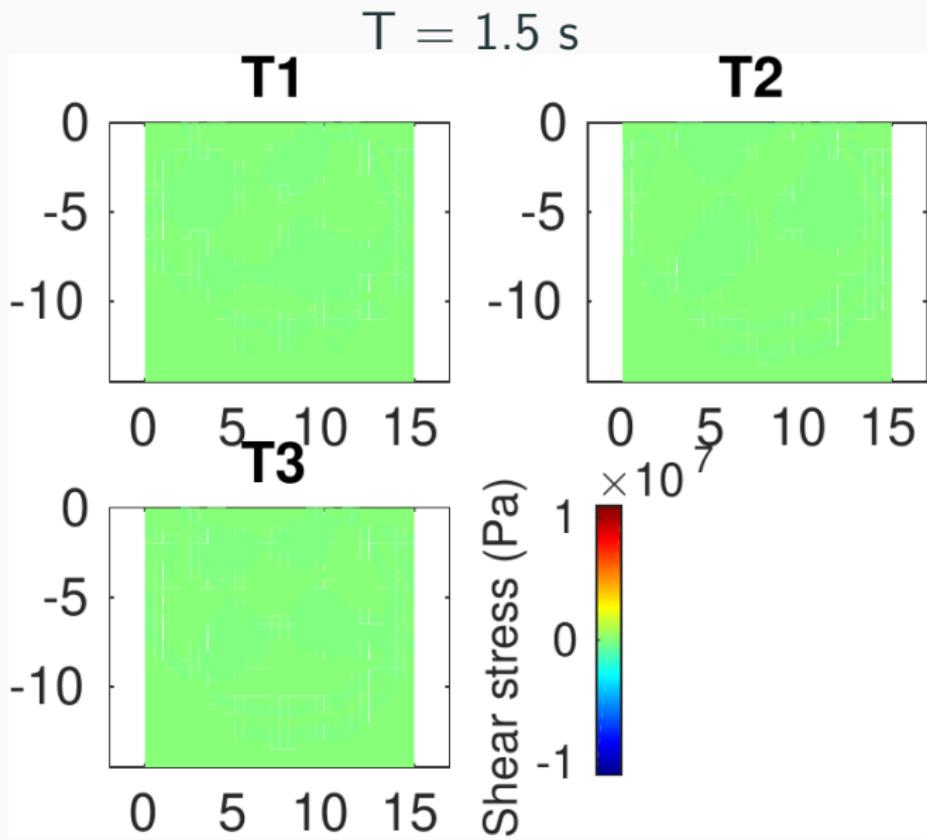
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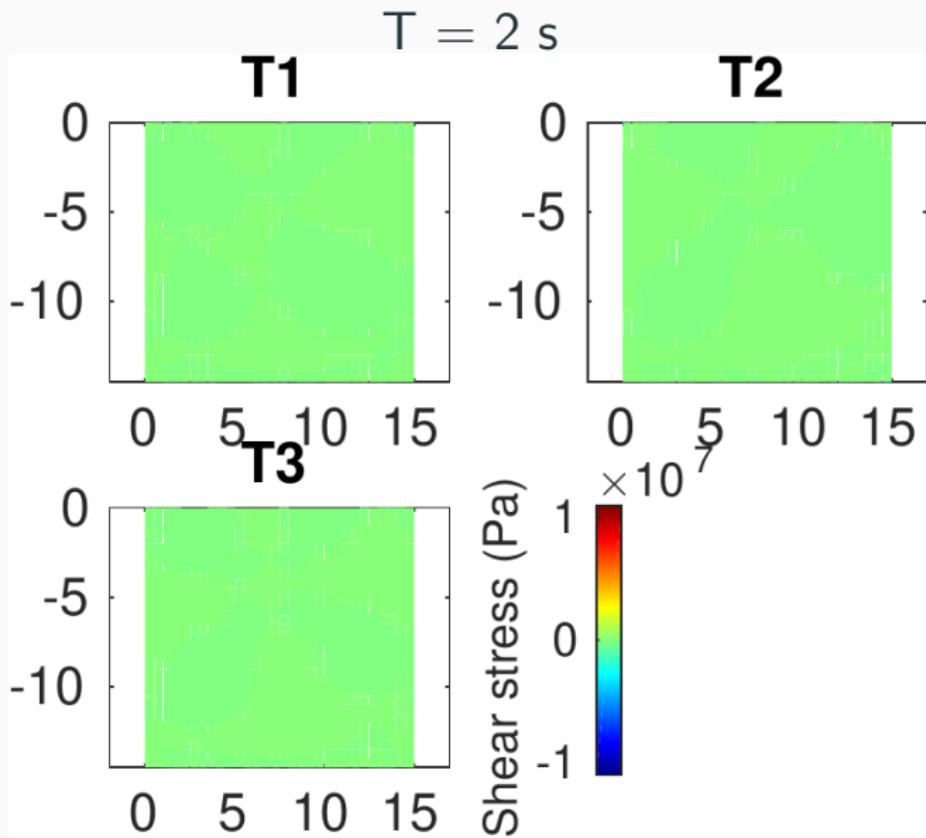
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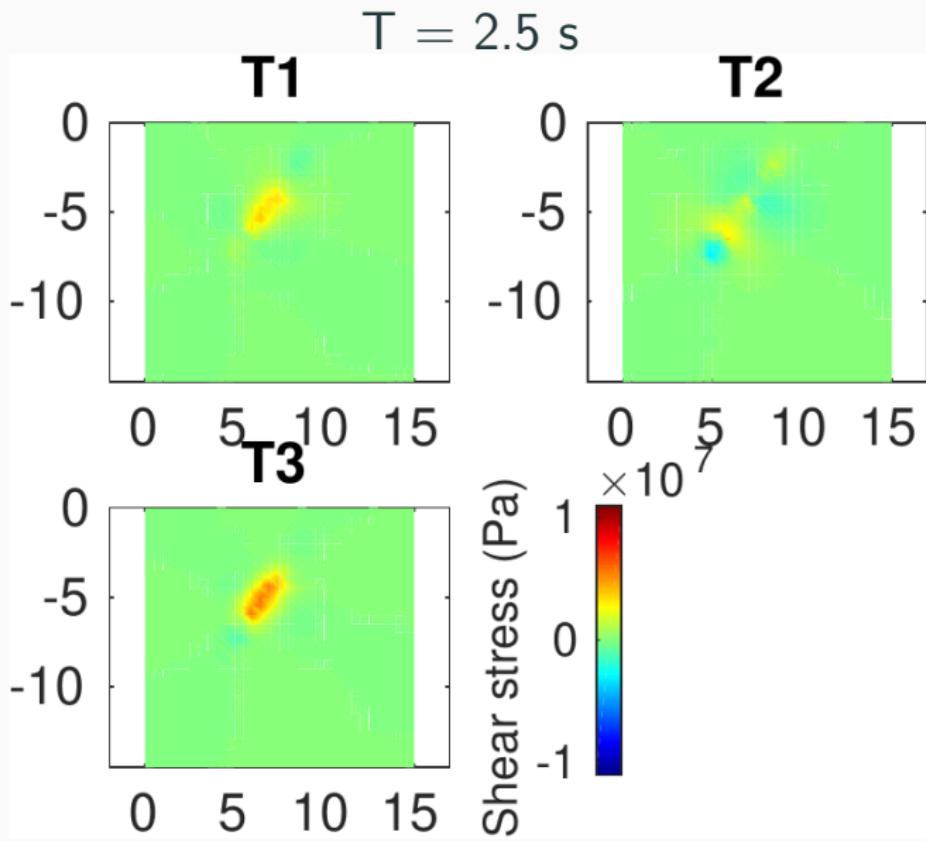
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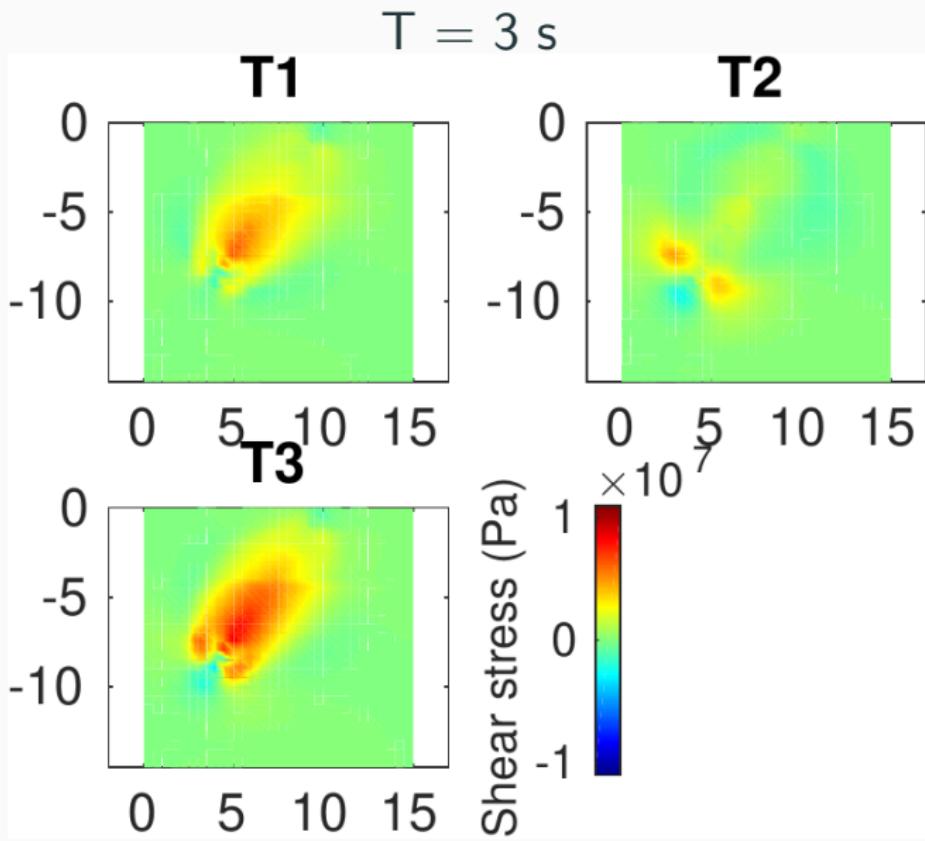
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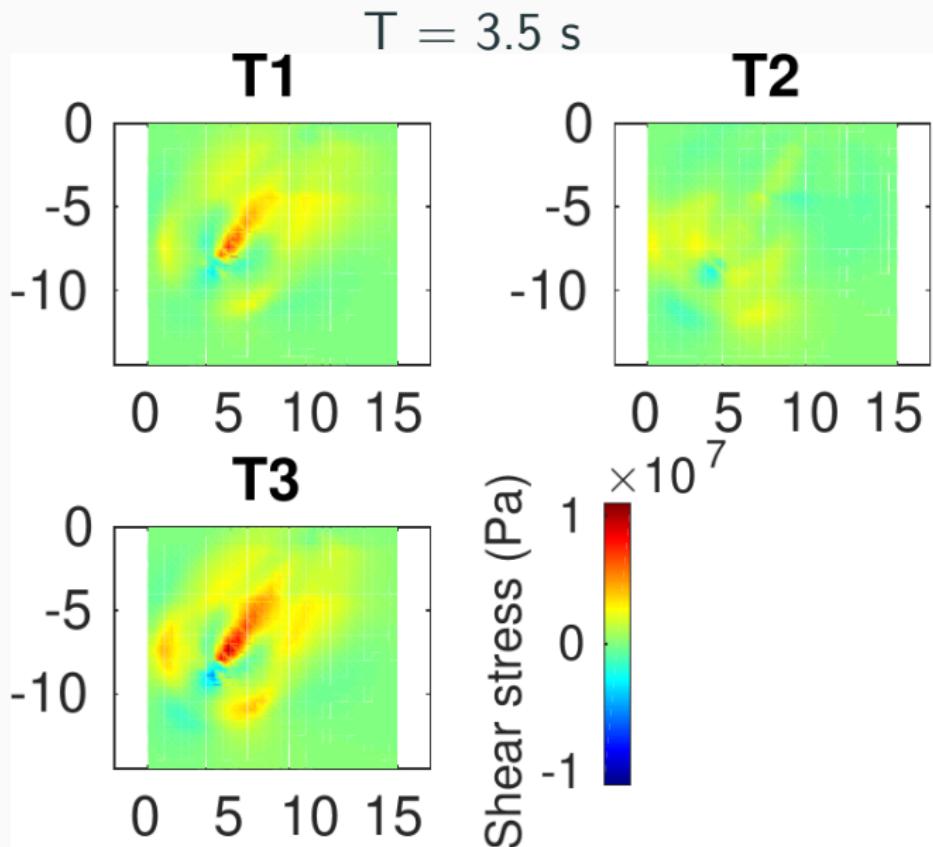
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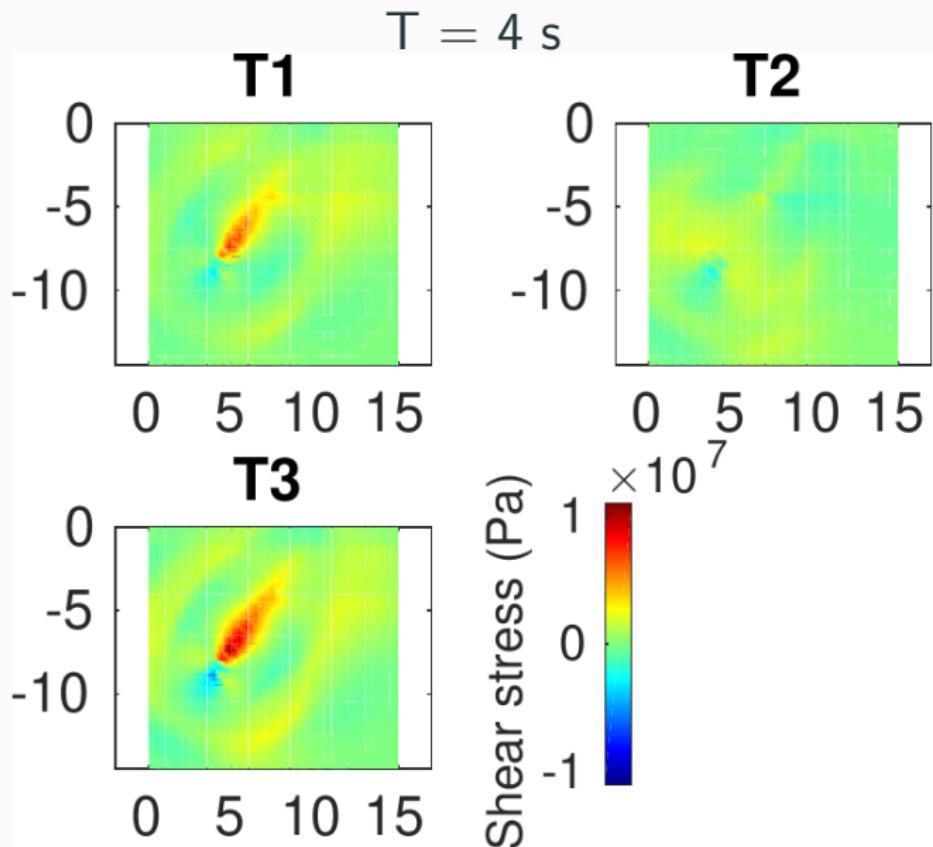
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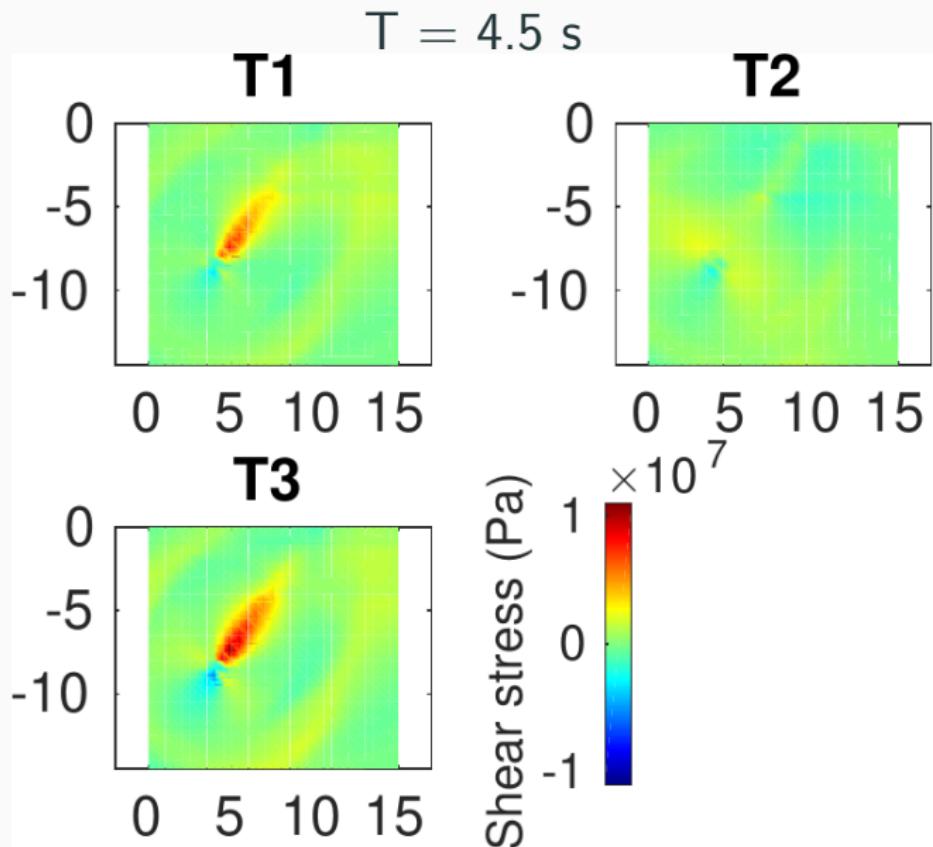
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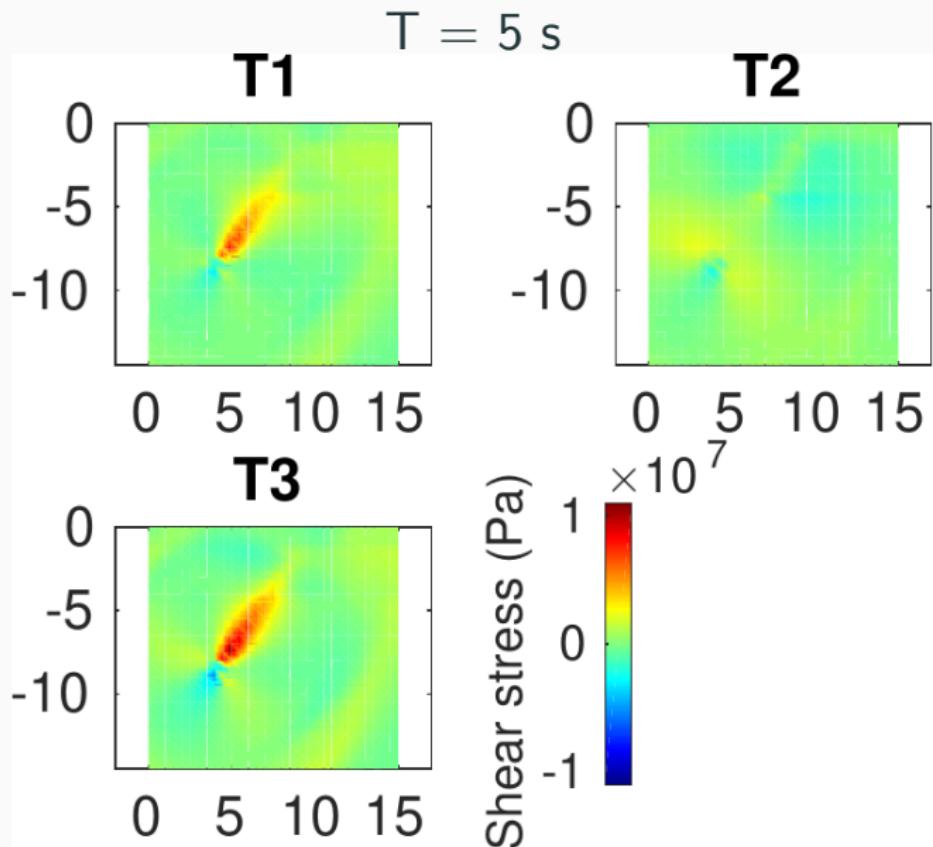
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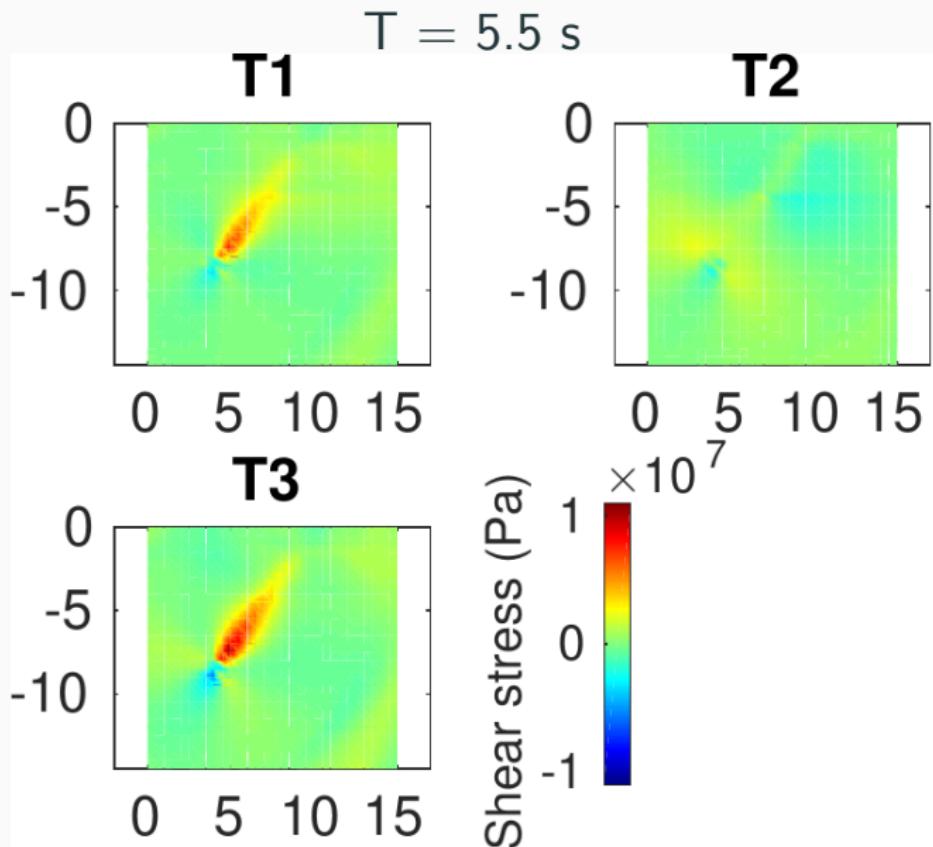
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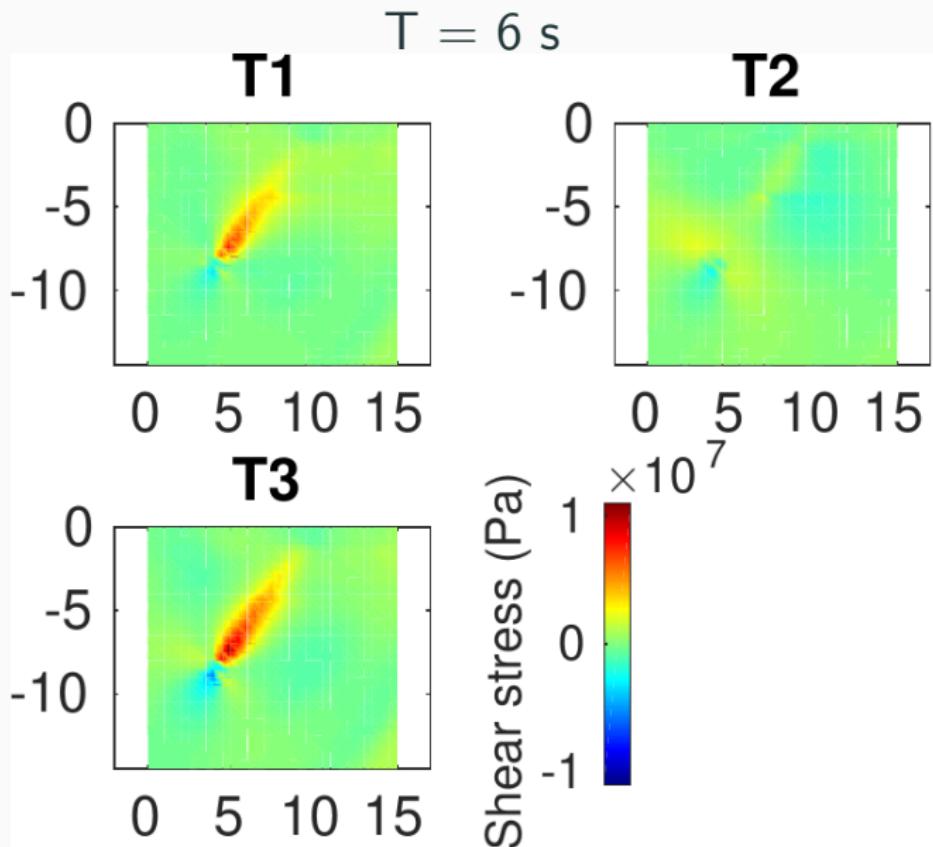
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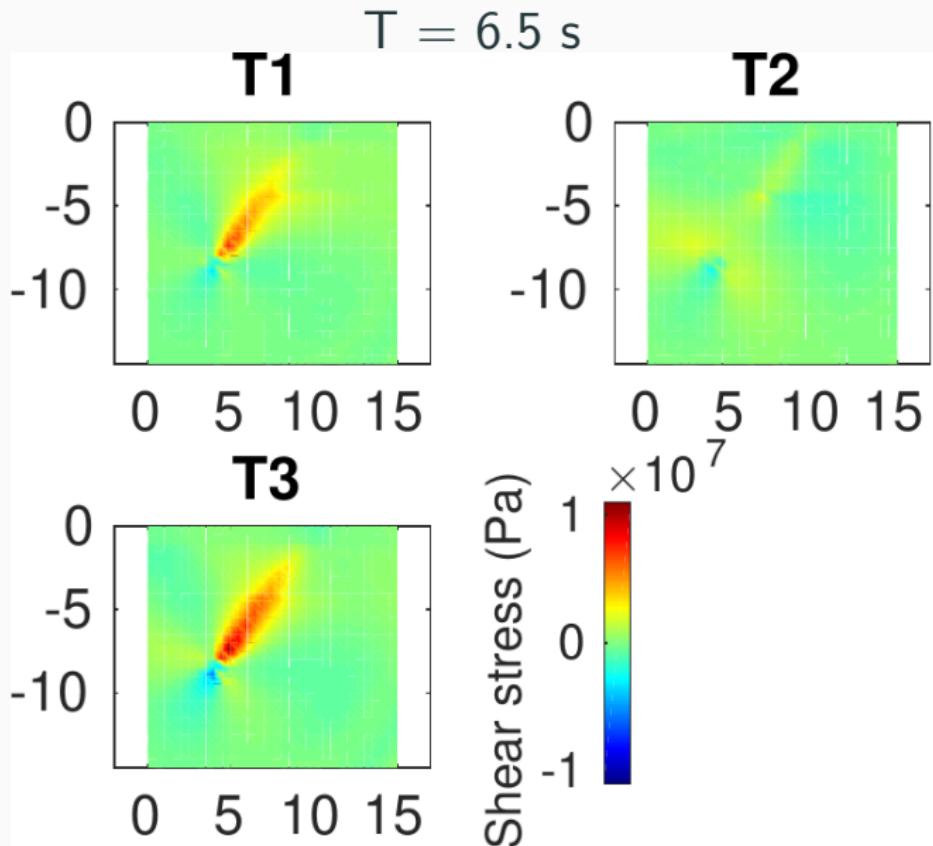
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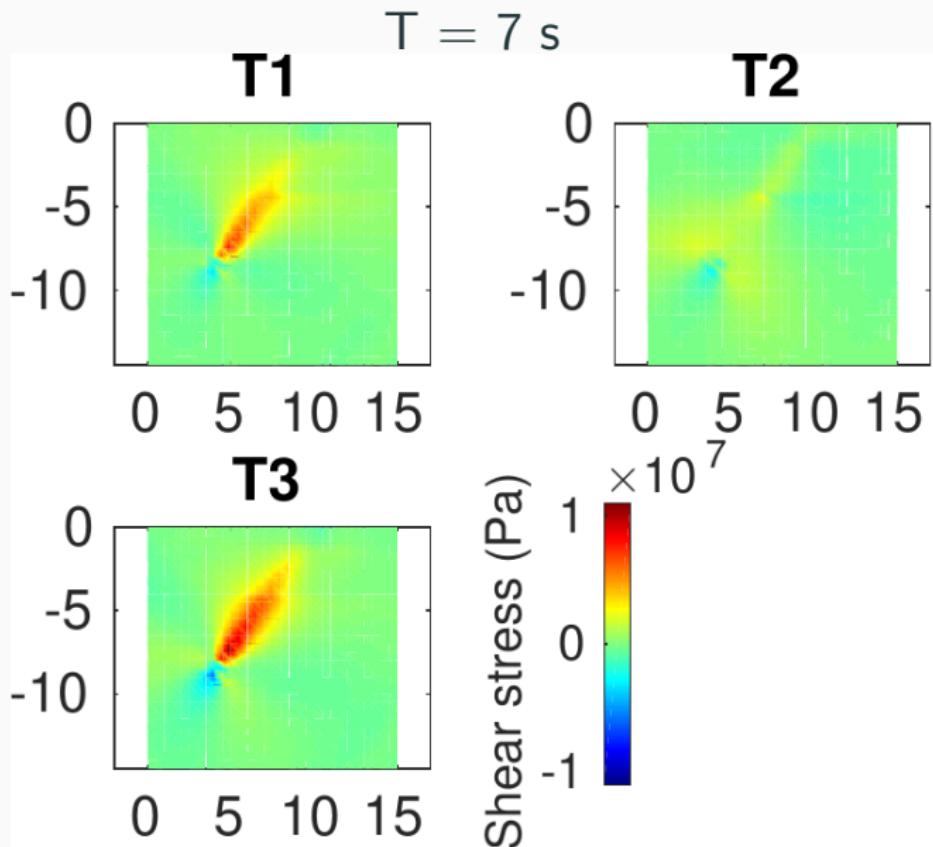
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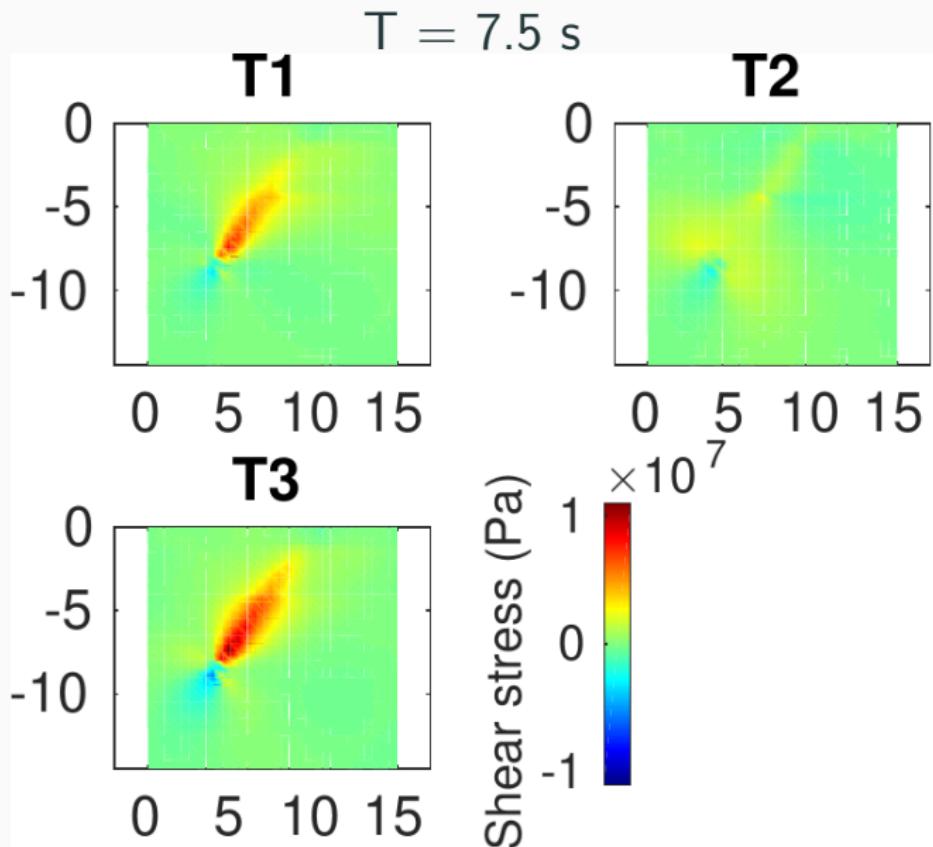
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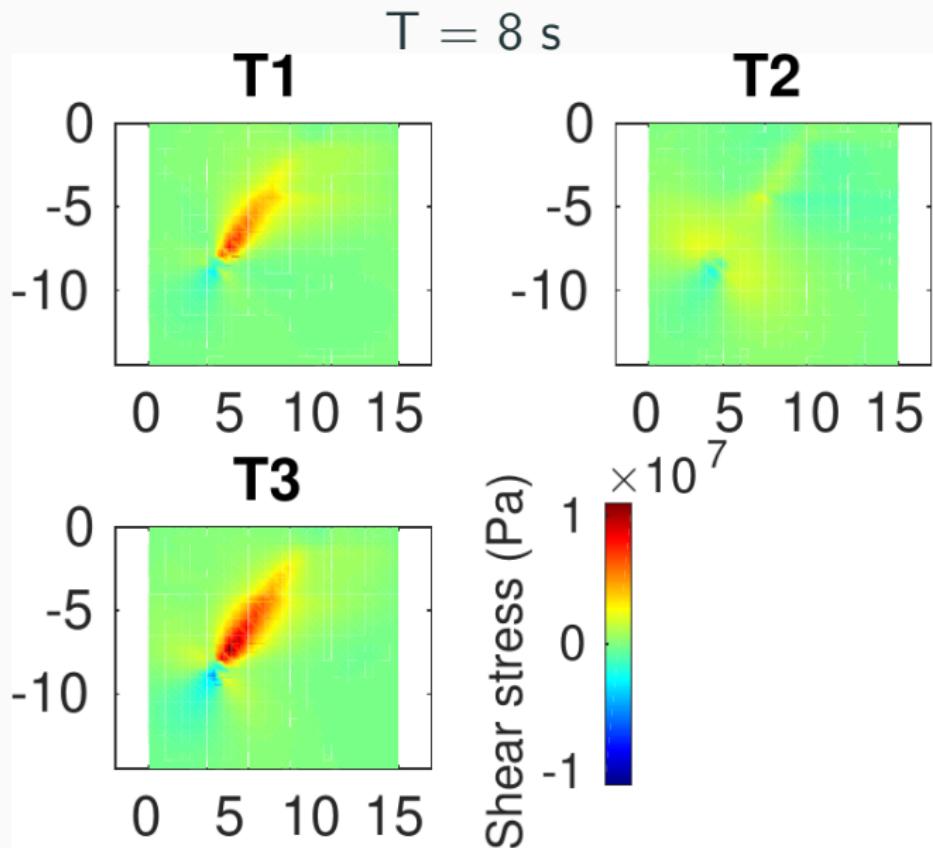
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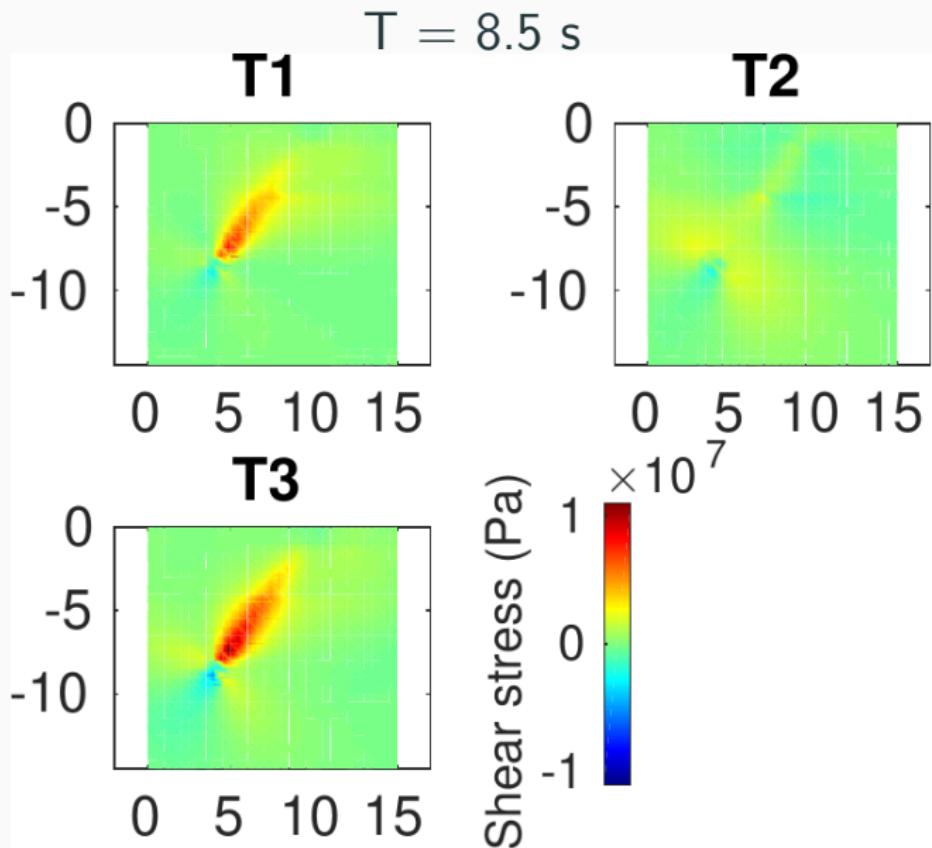
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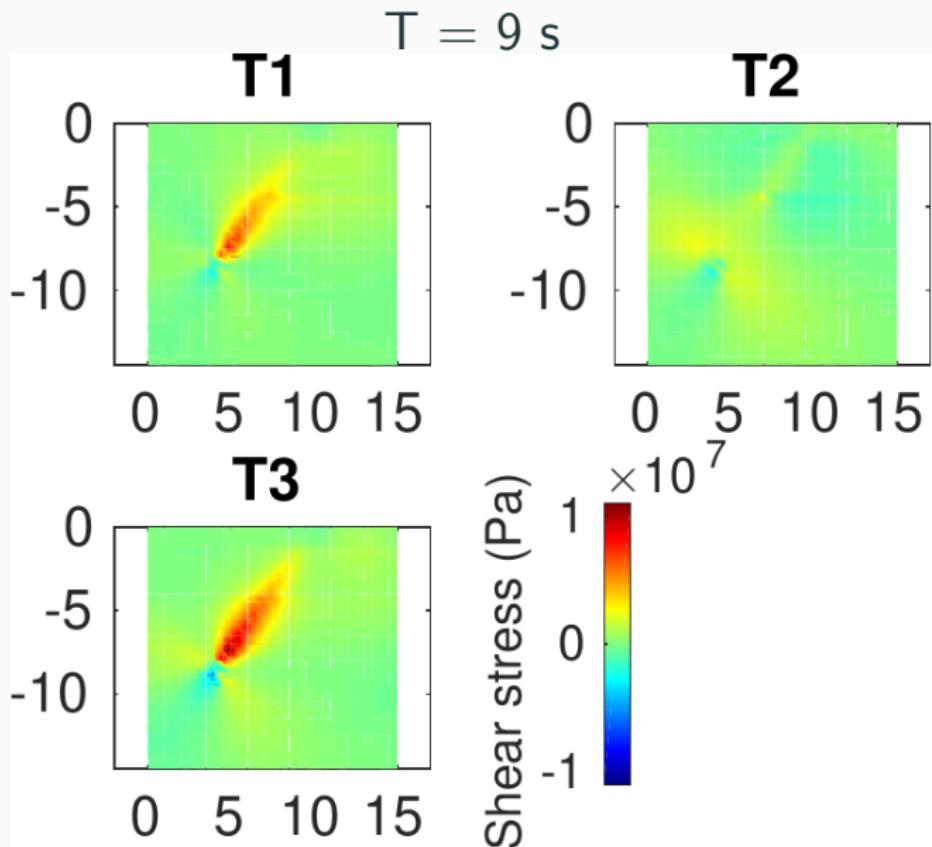
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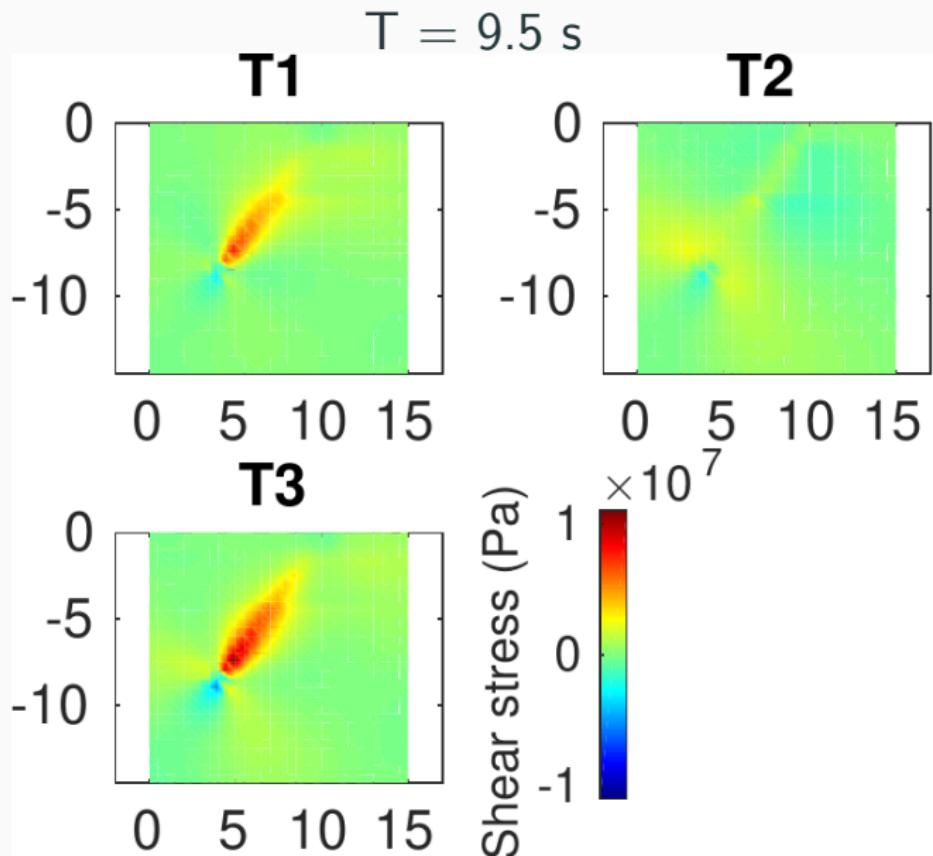
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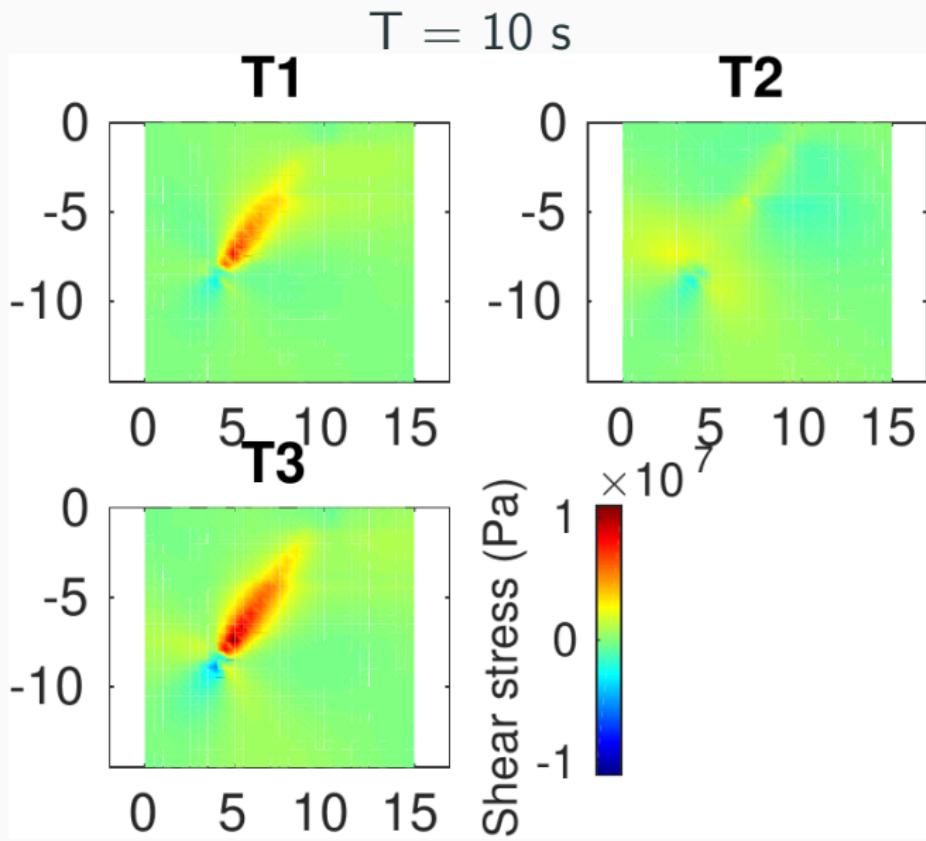
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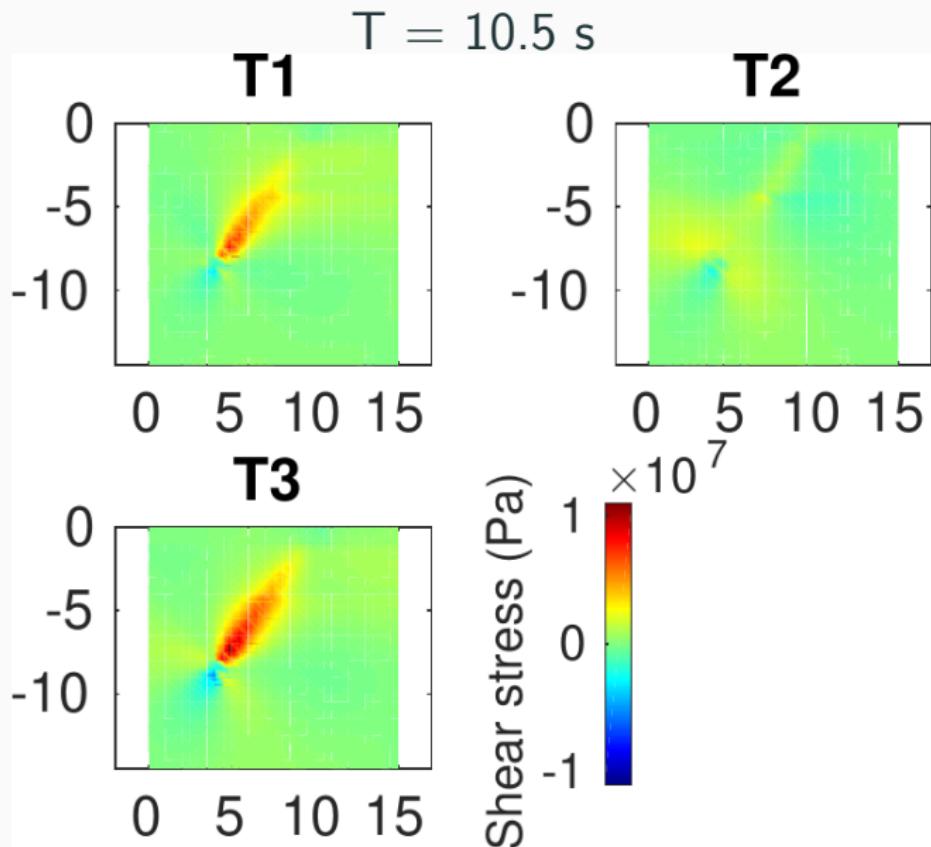
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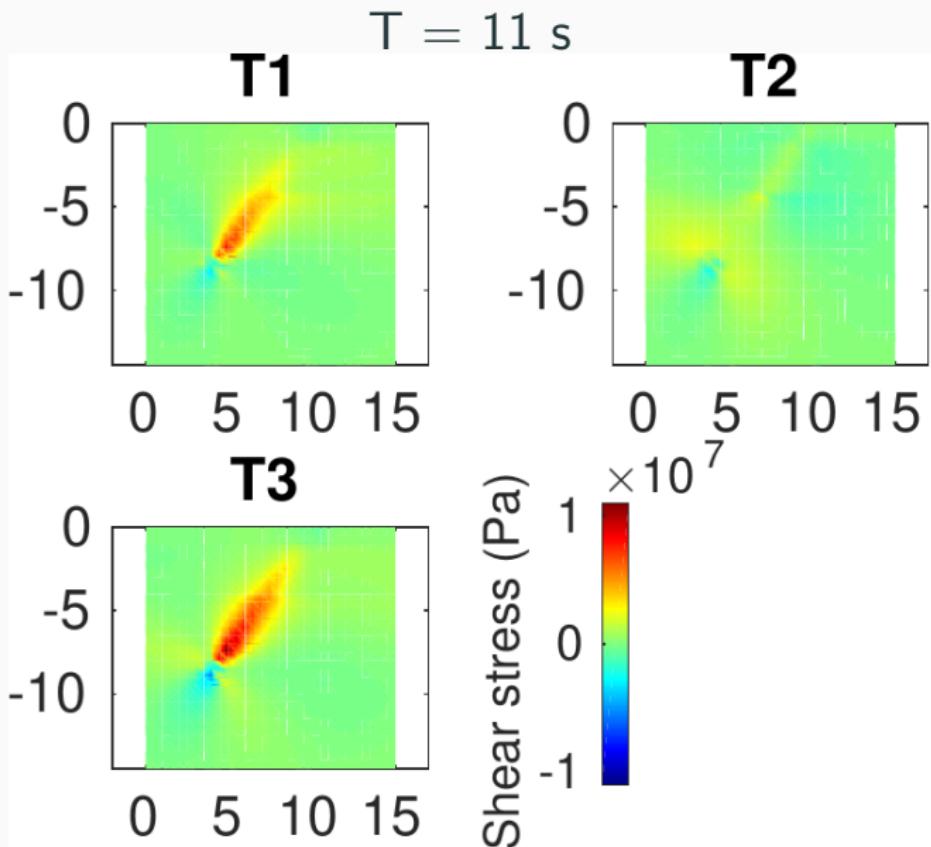
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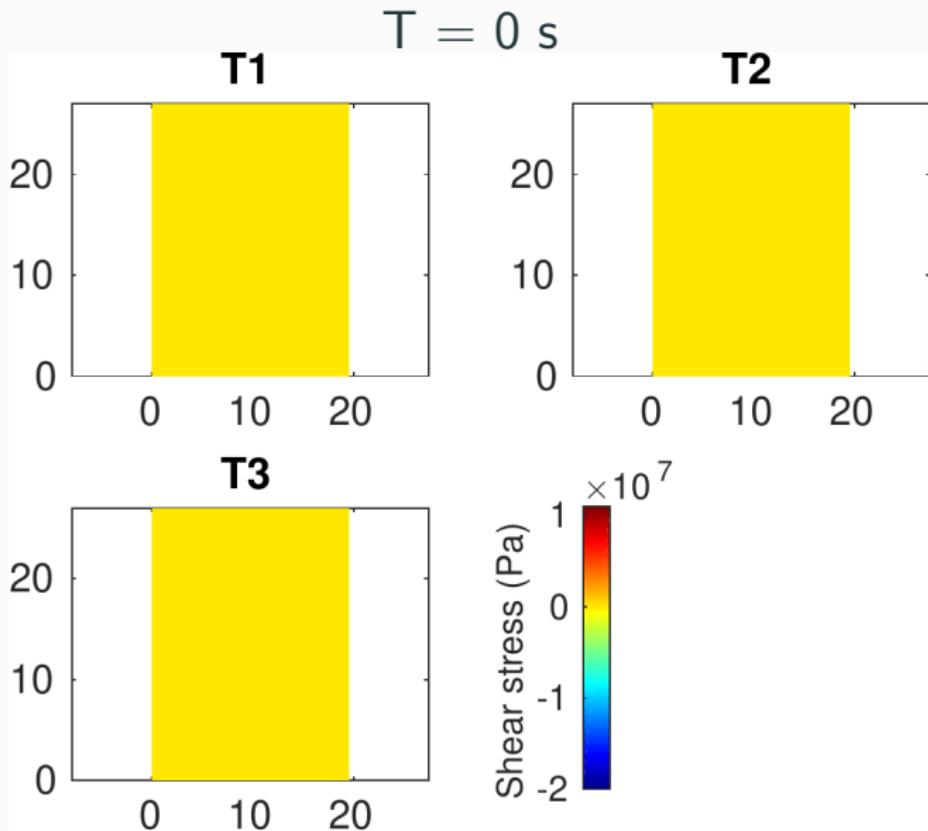
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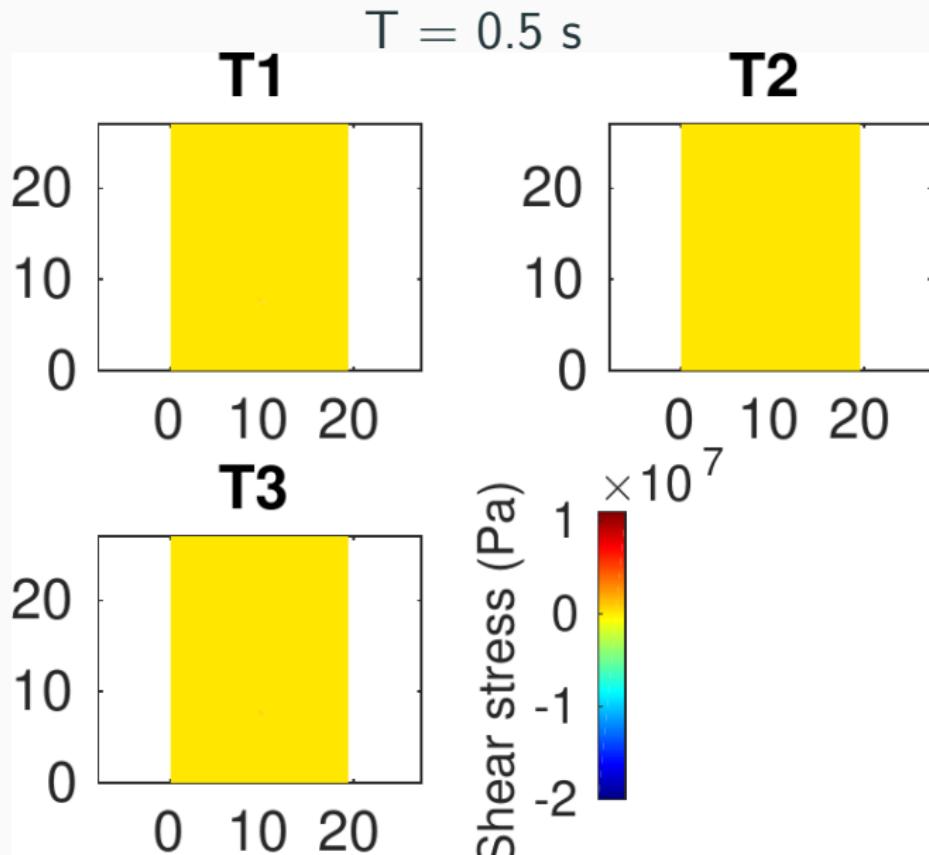
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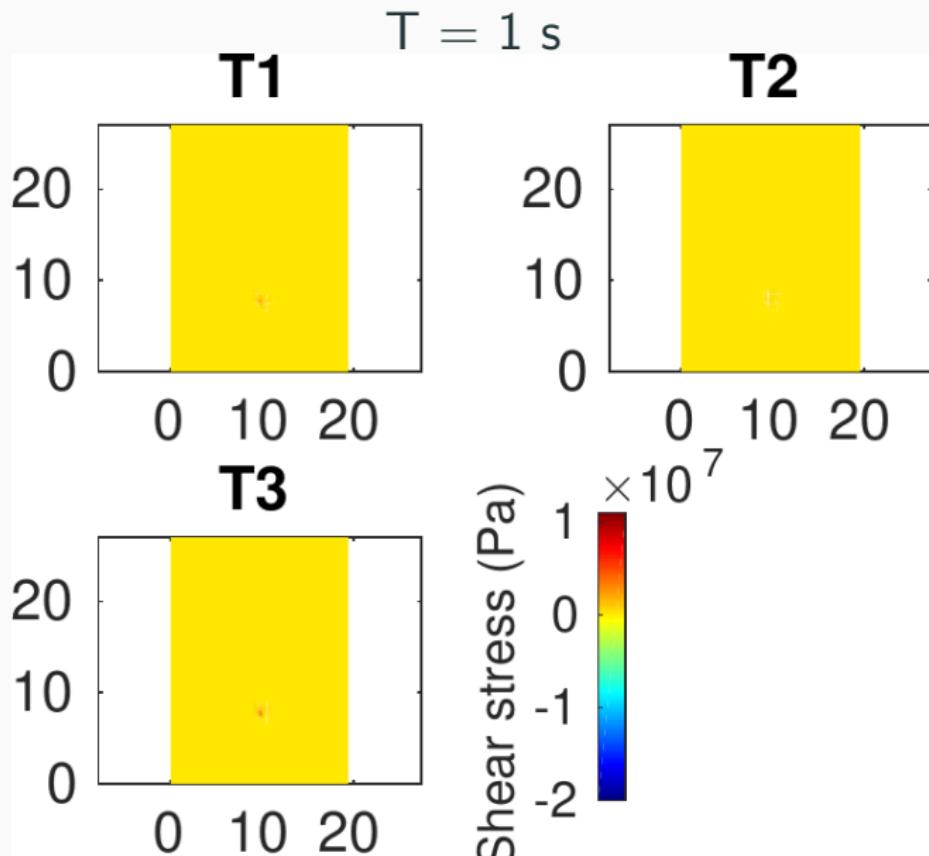
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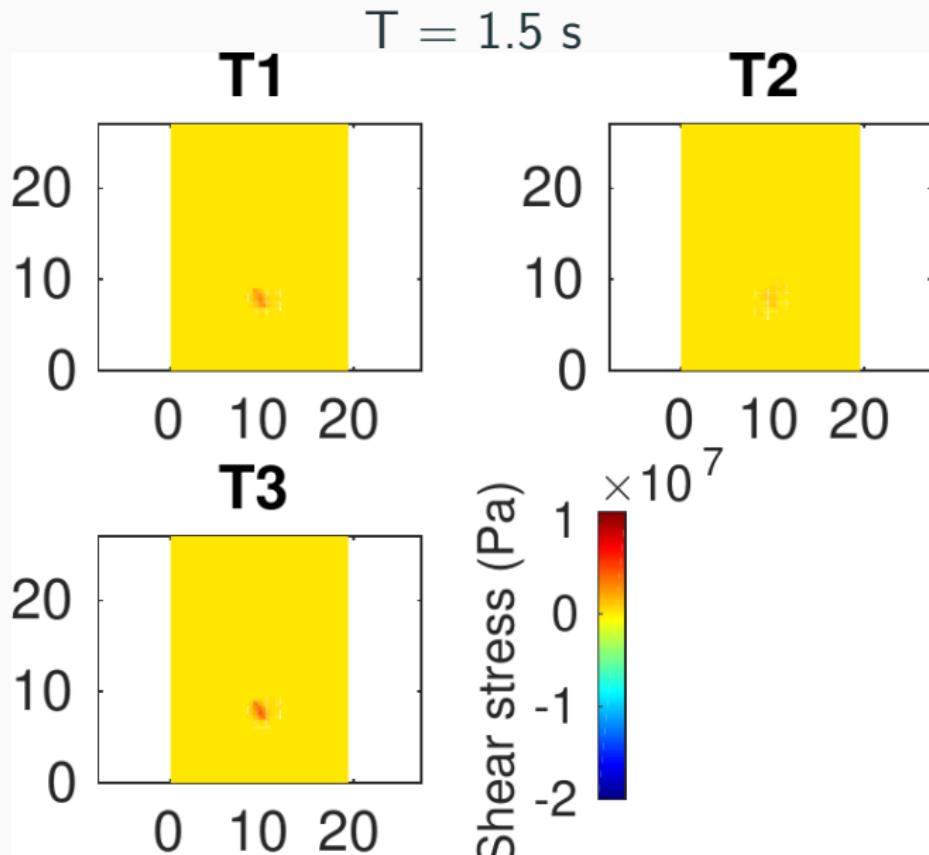
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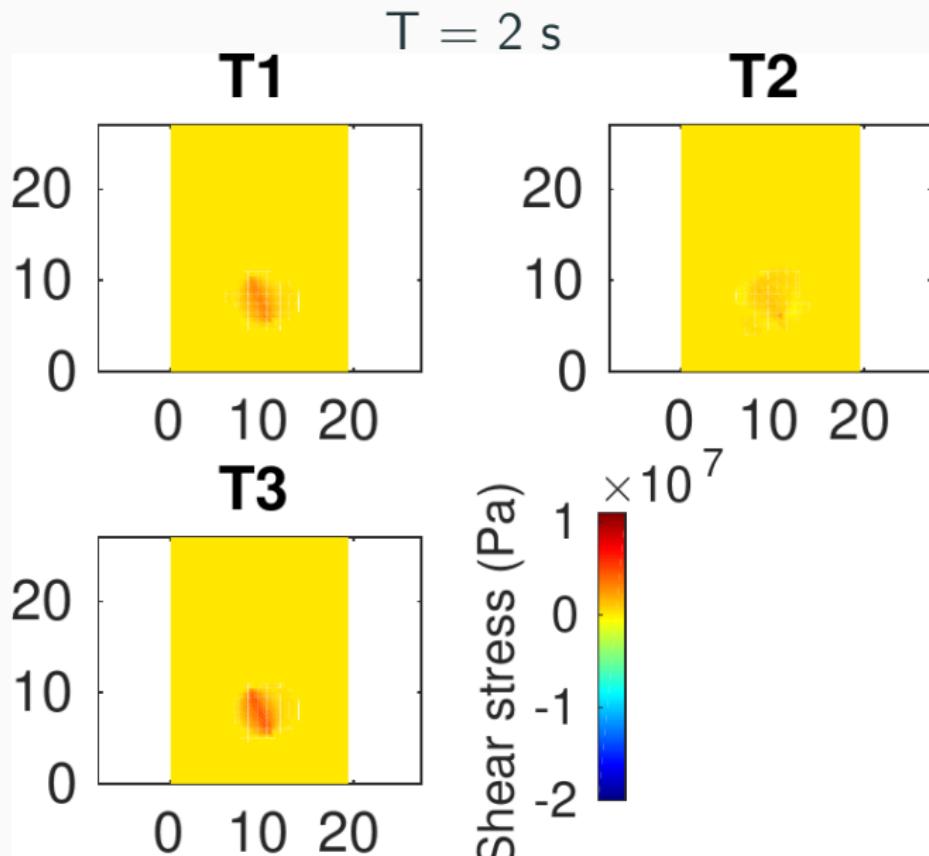
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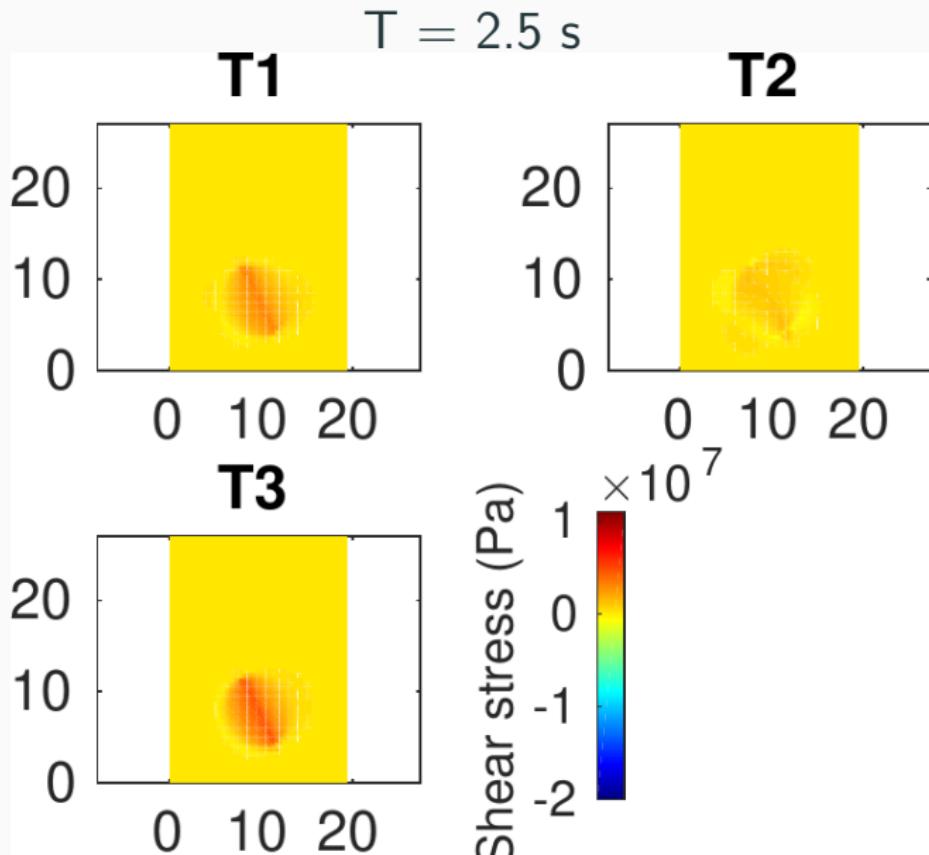
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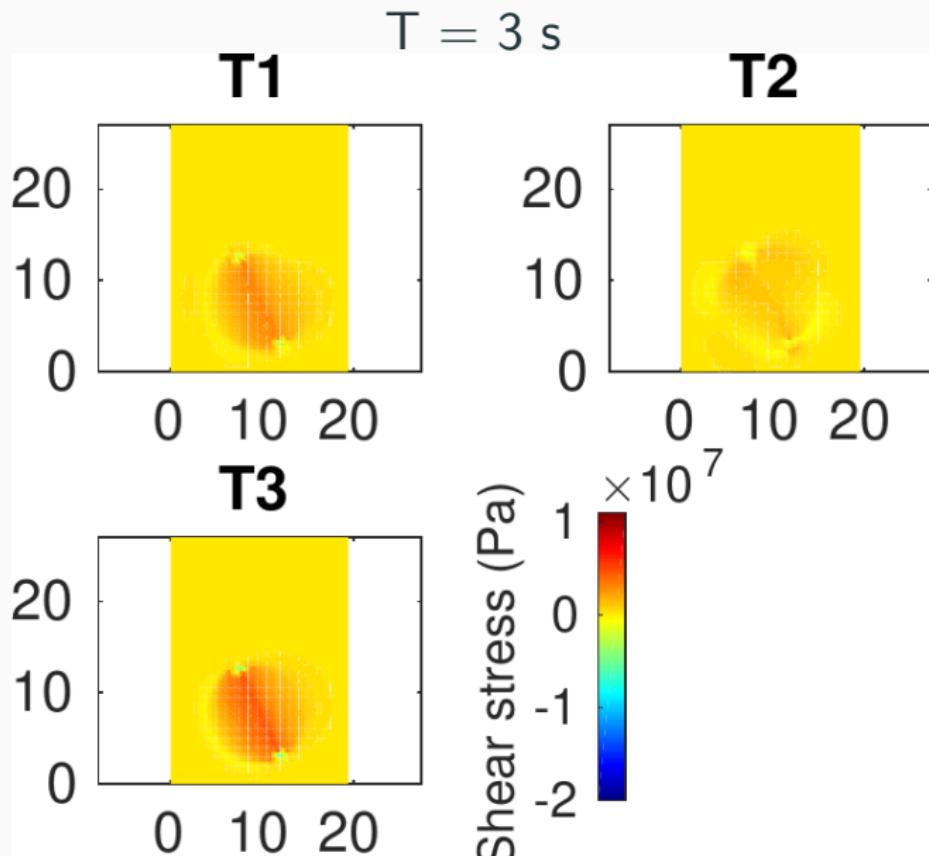
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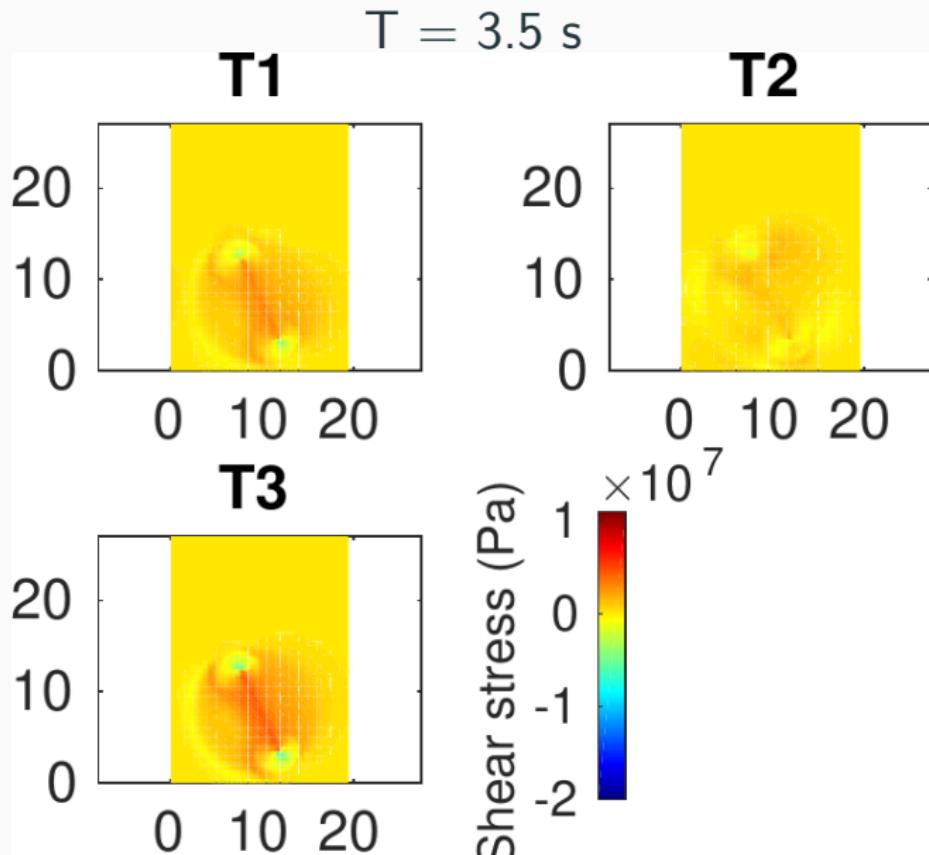
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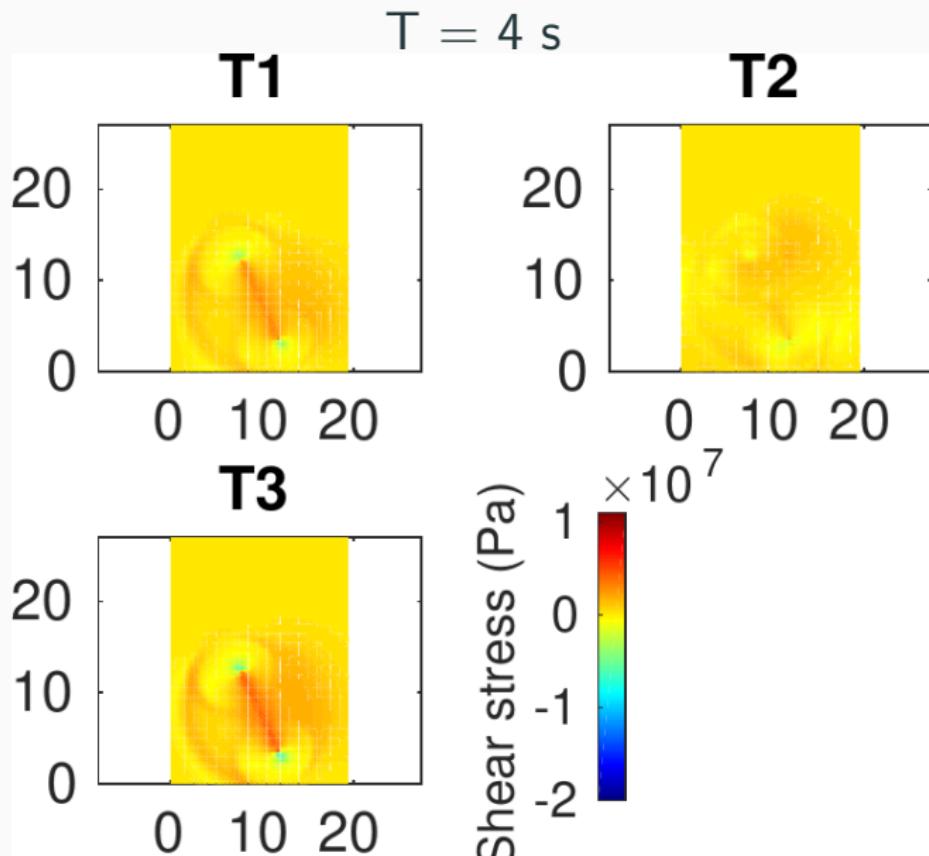
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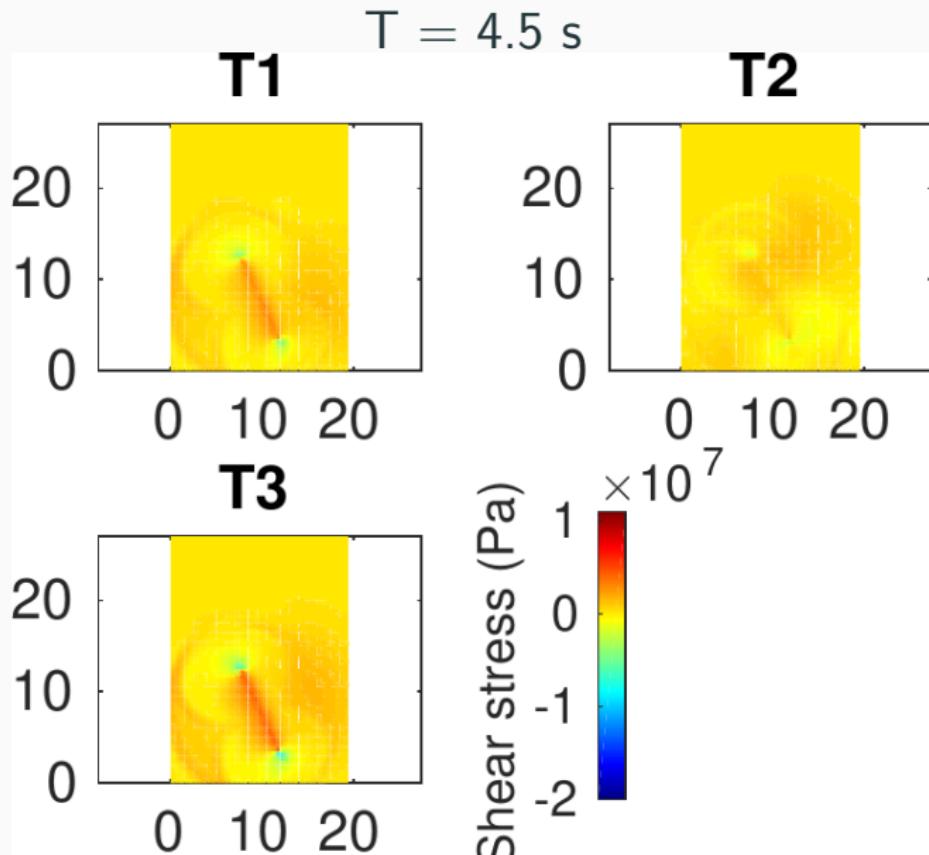
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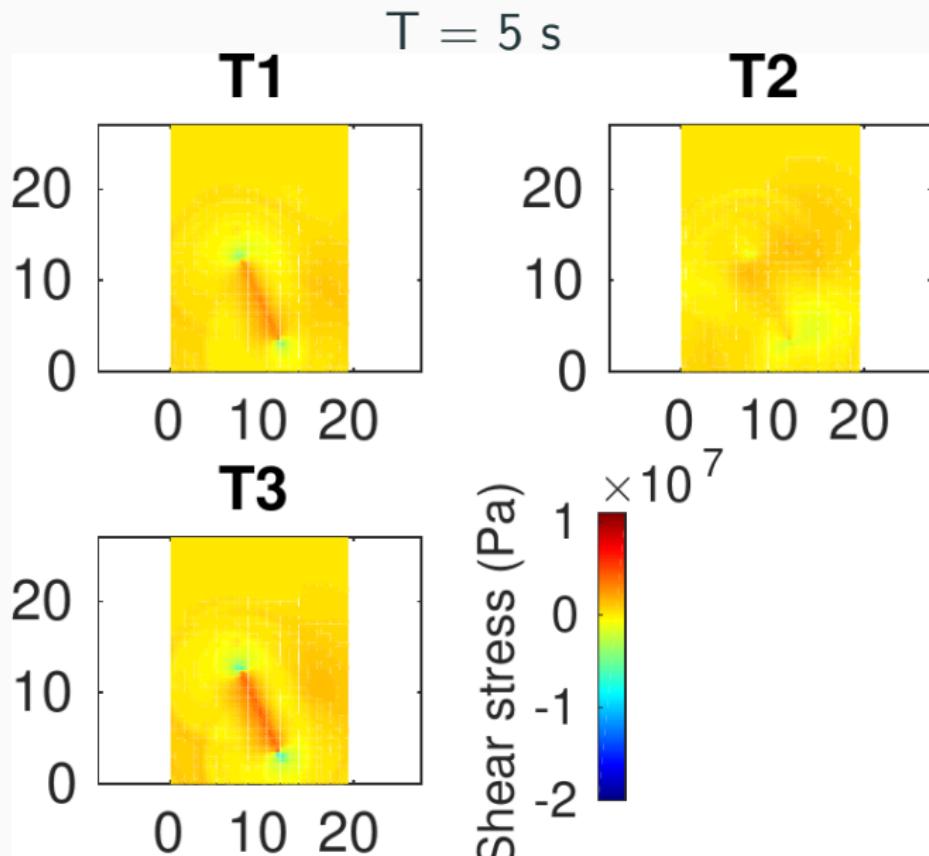
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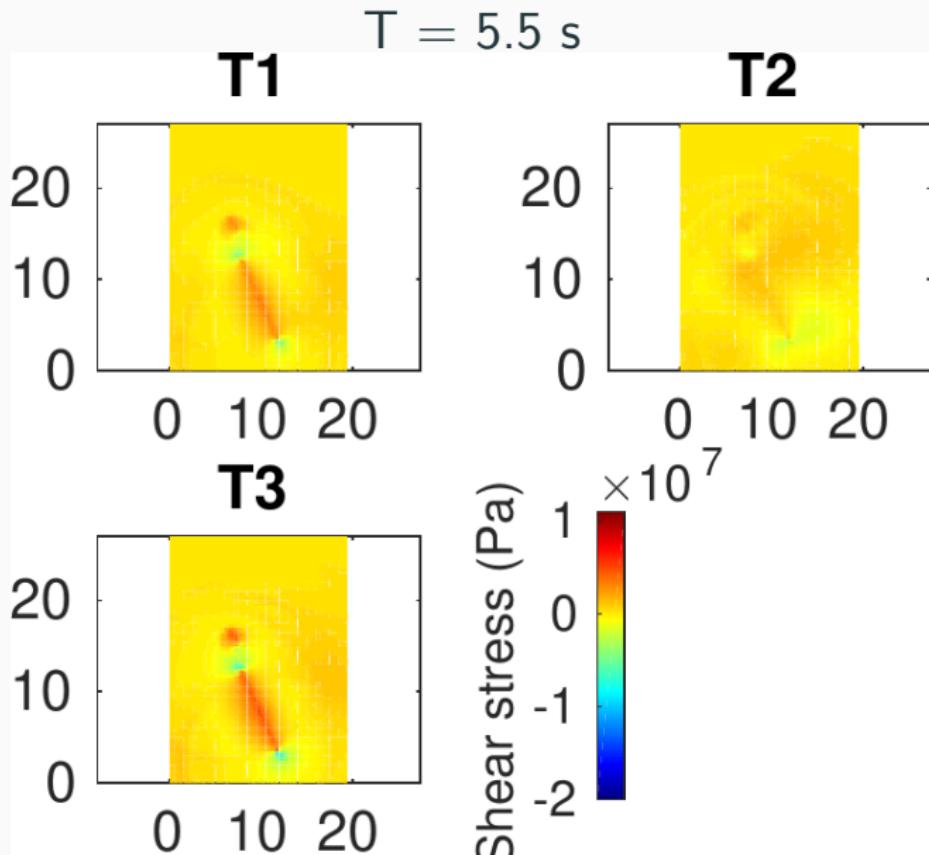
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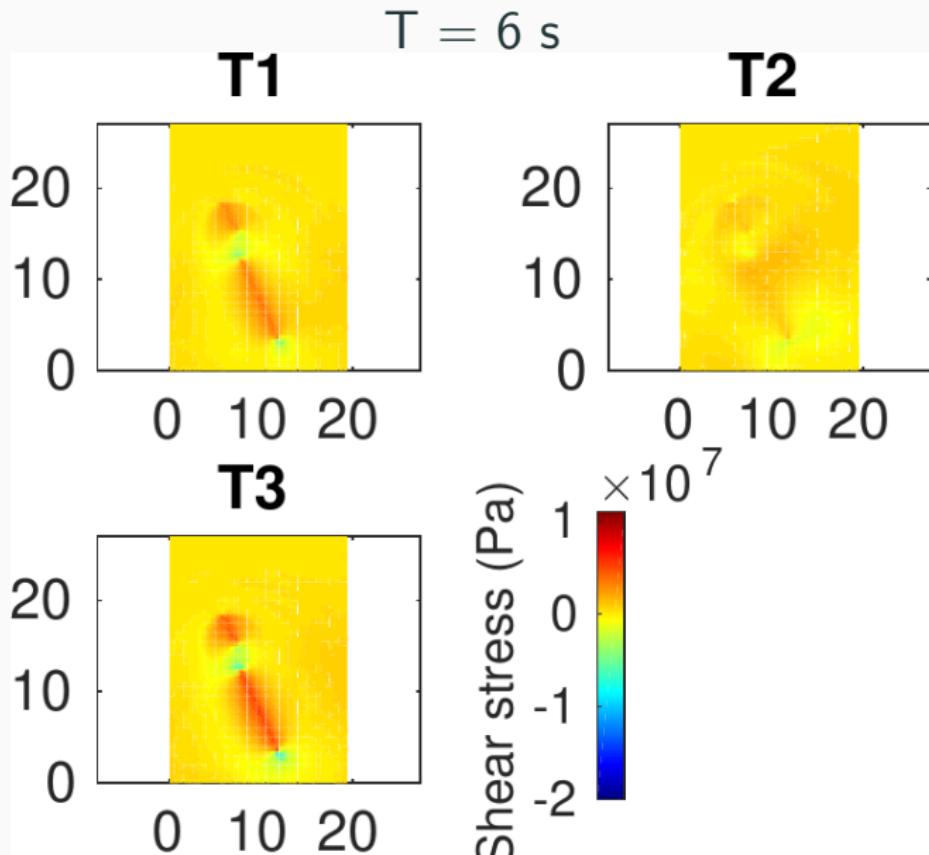
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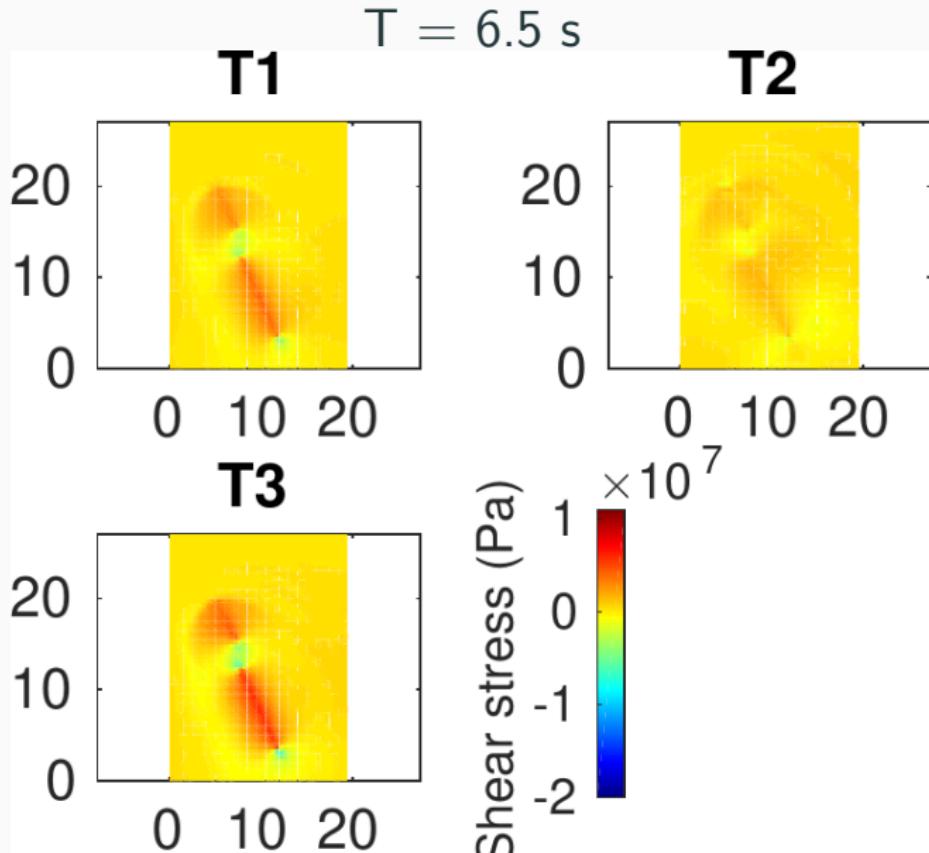
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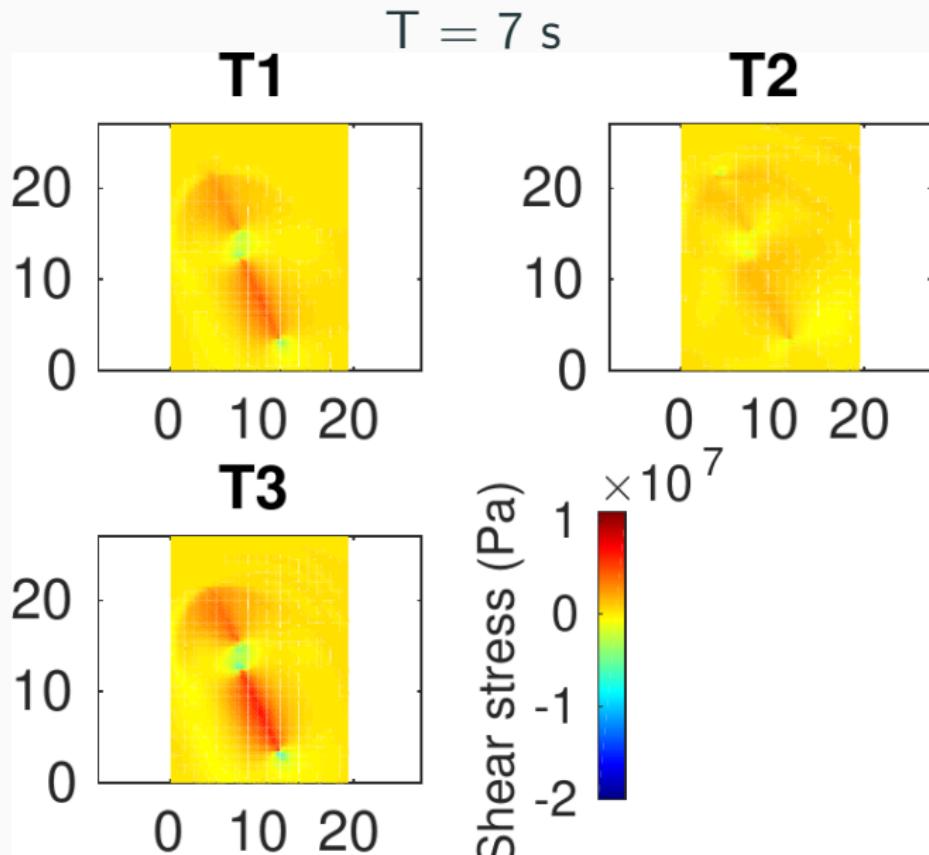
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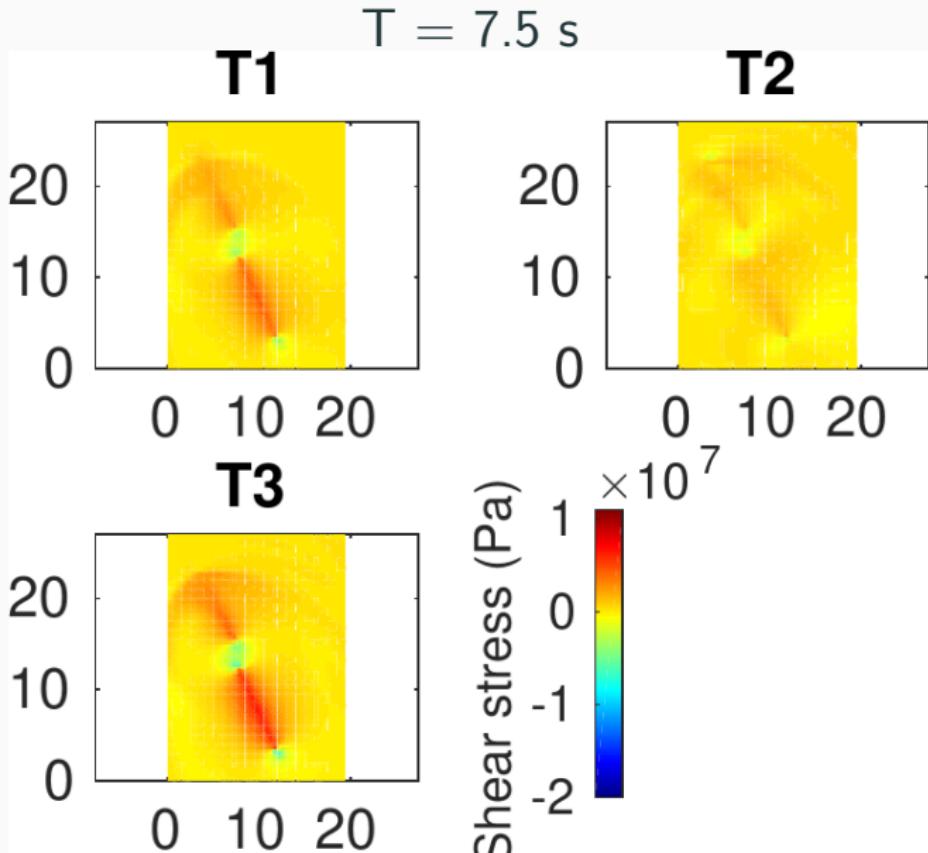


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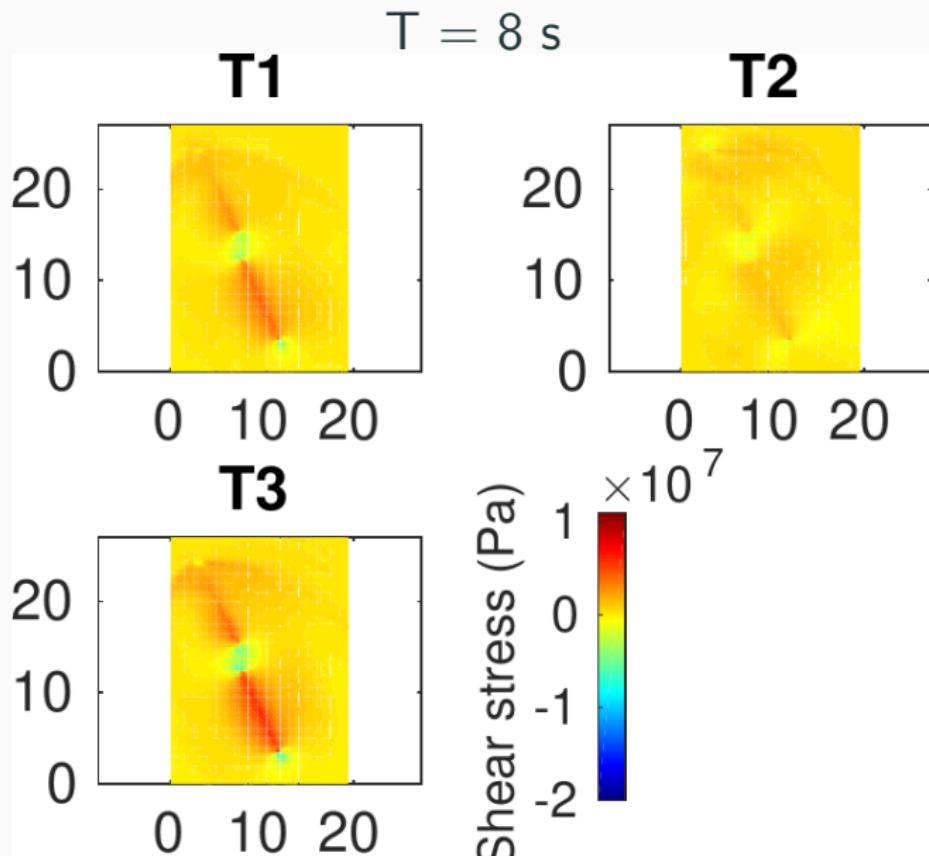


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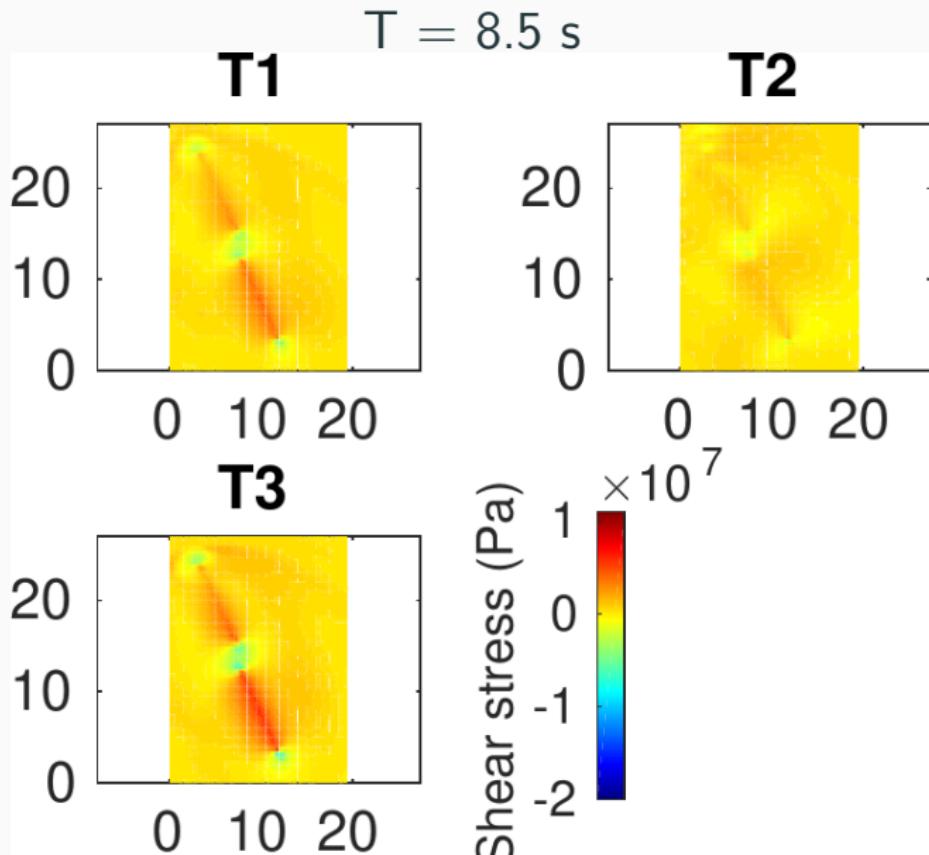
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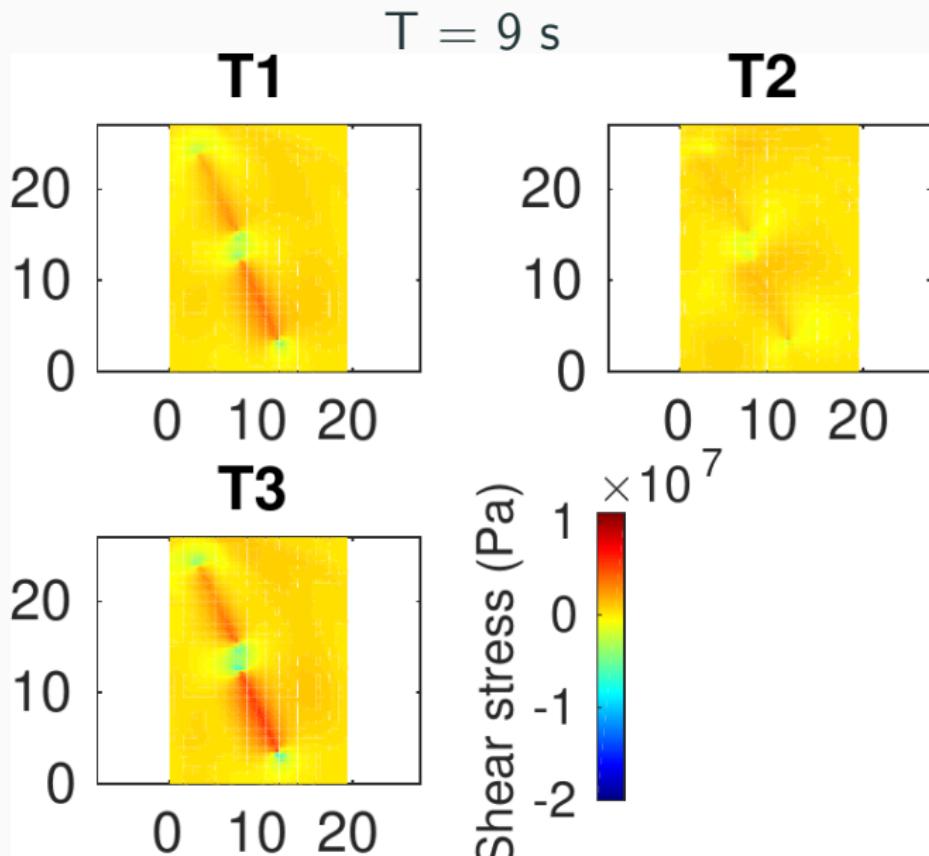
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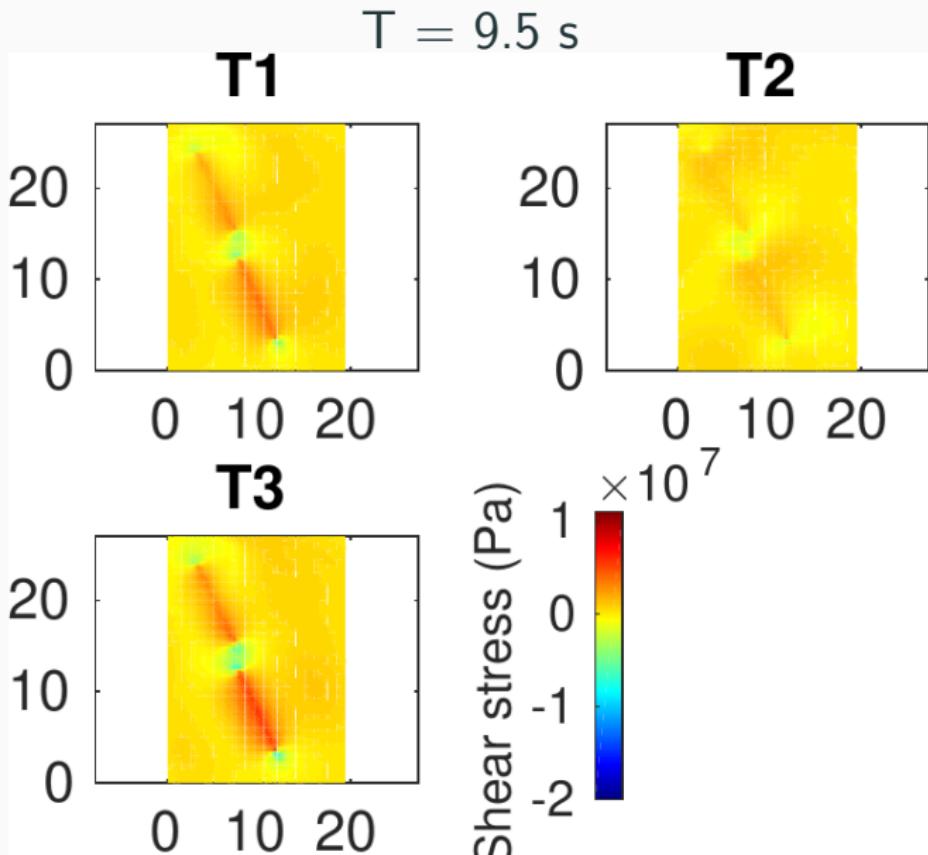
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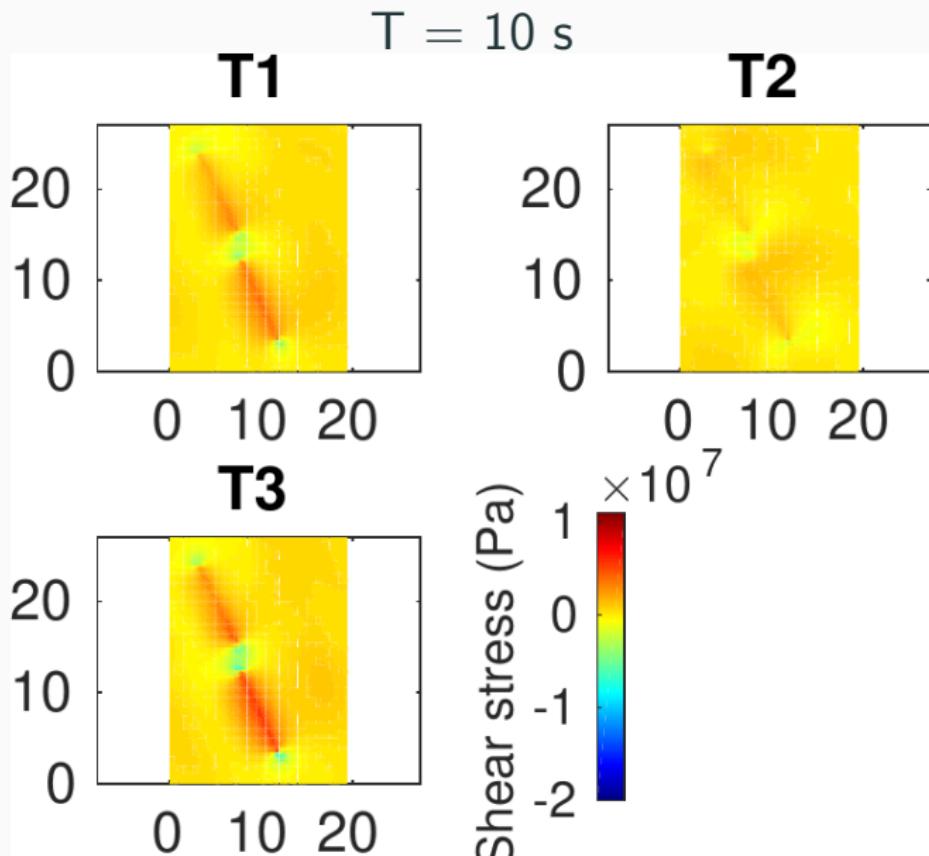
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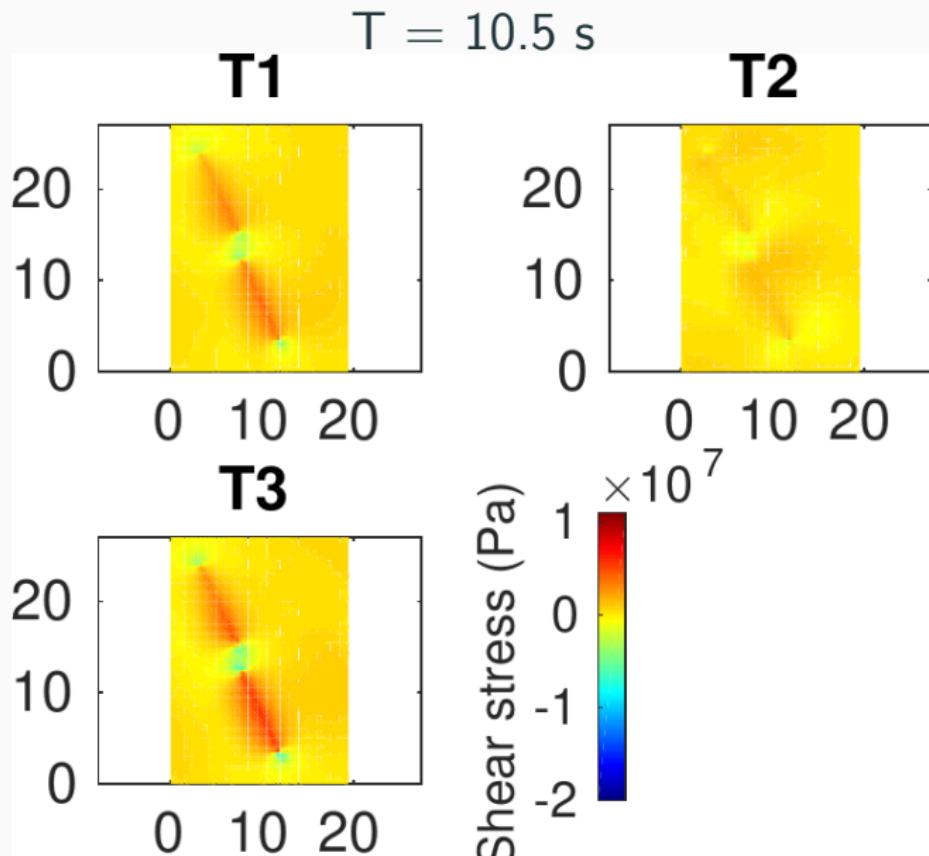
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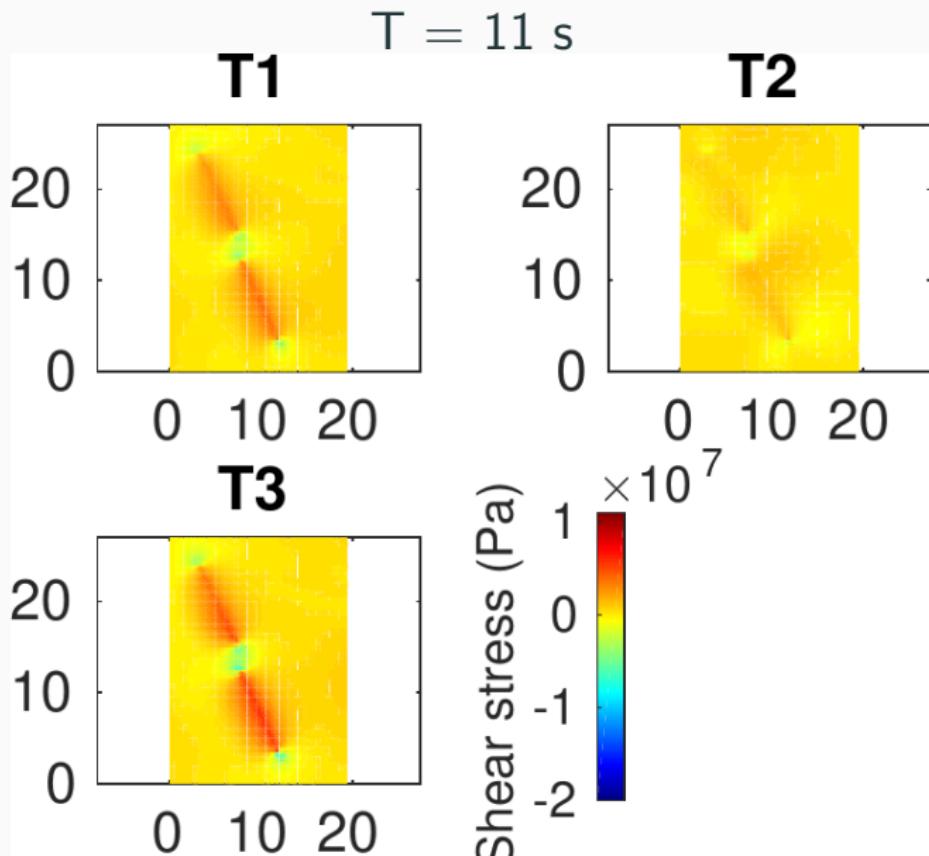
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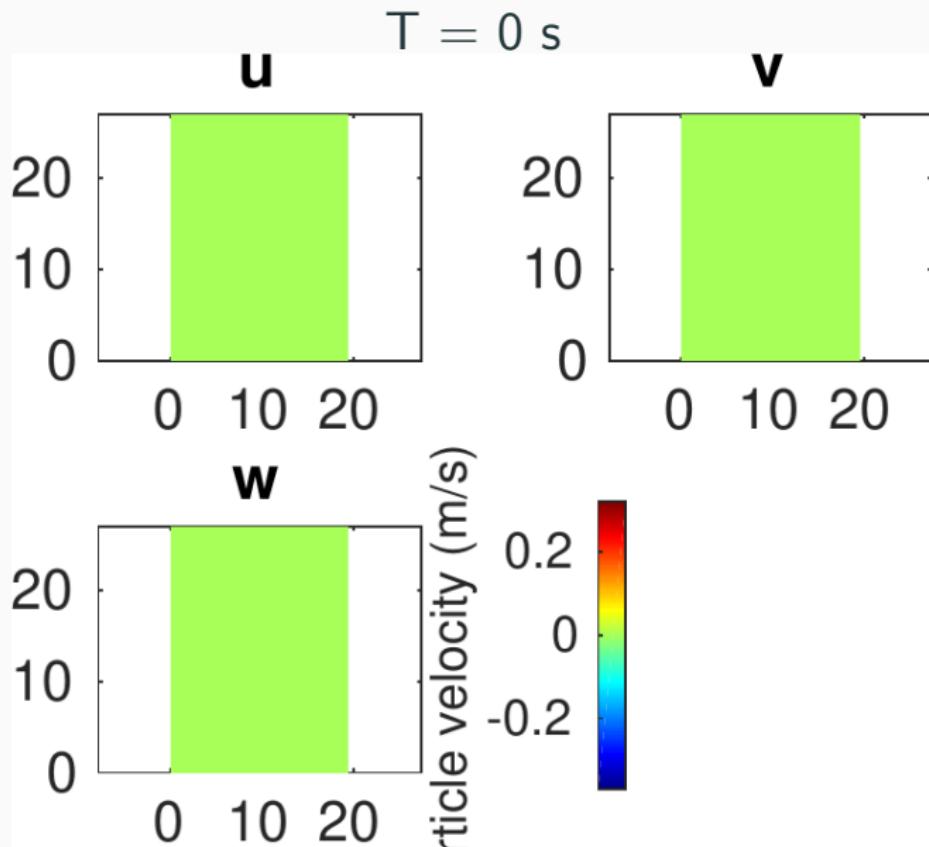
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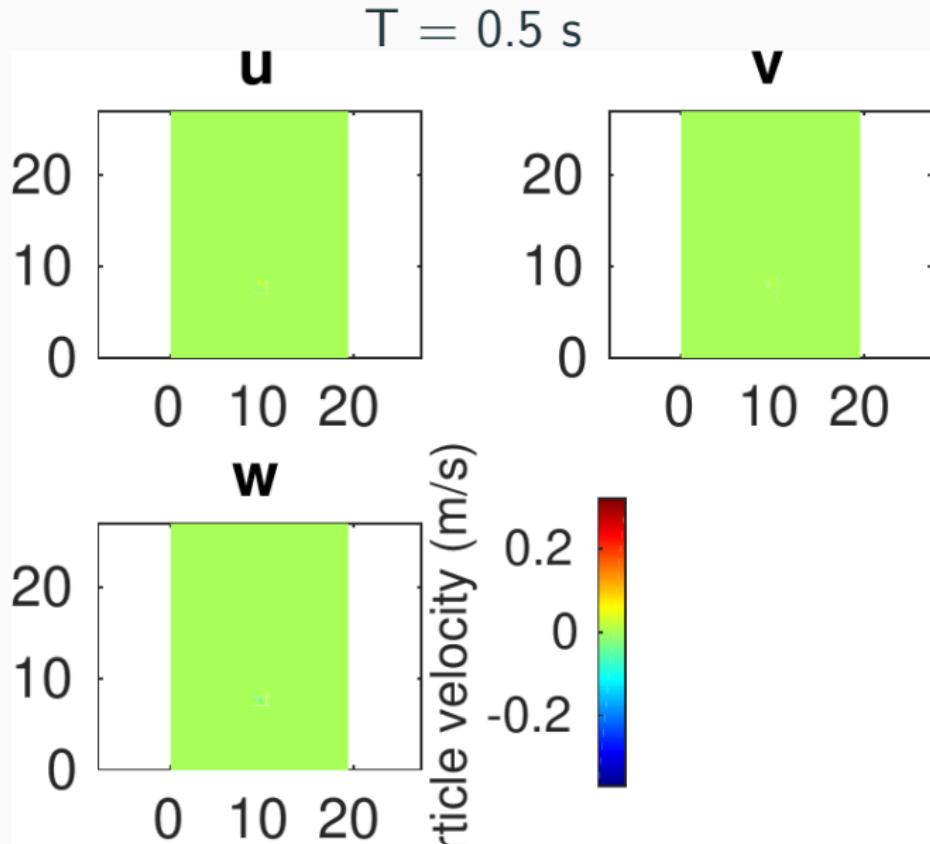
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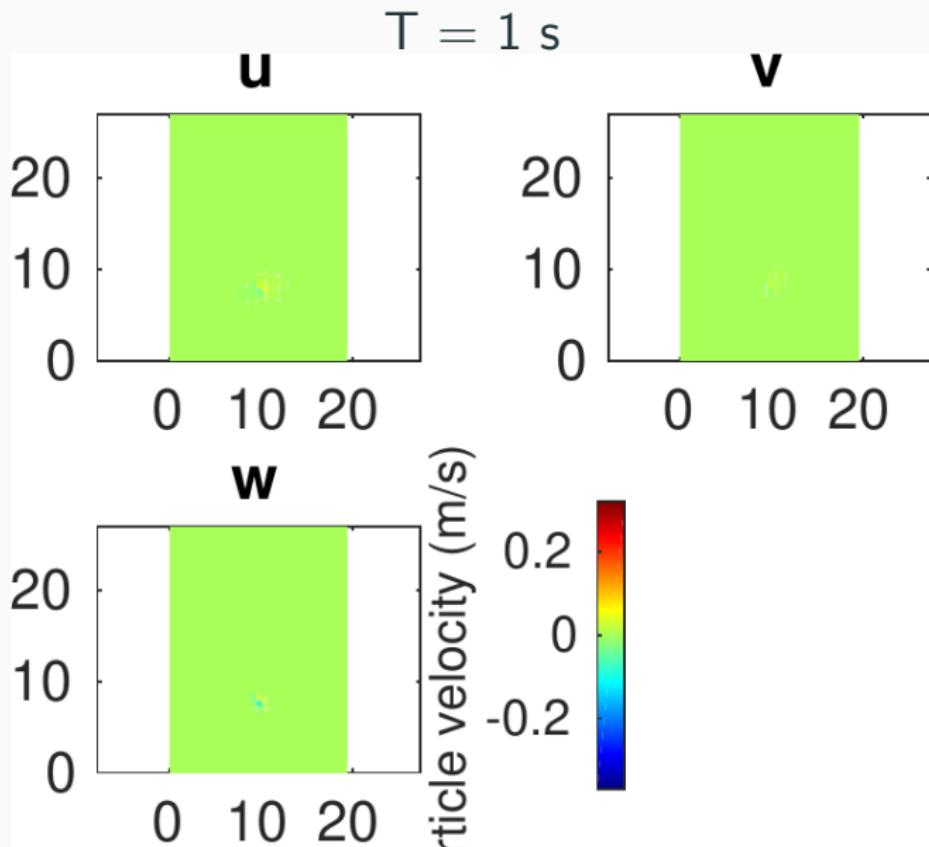
Particle velocity



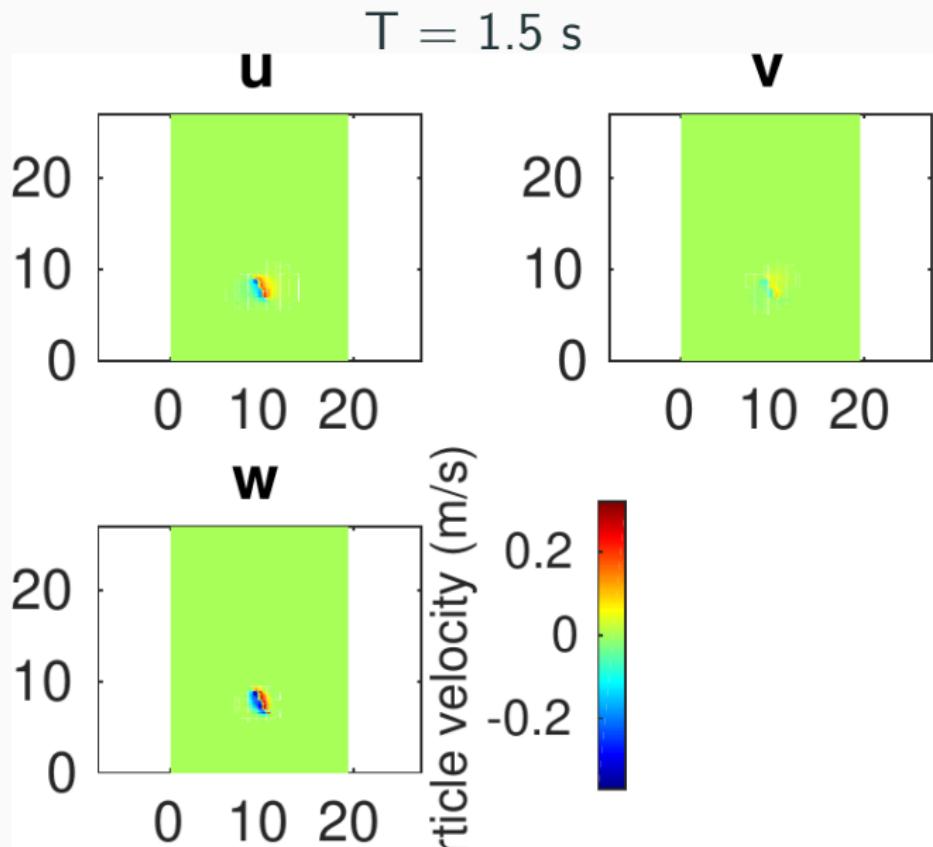
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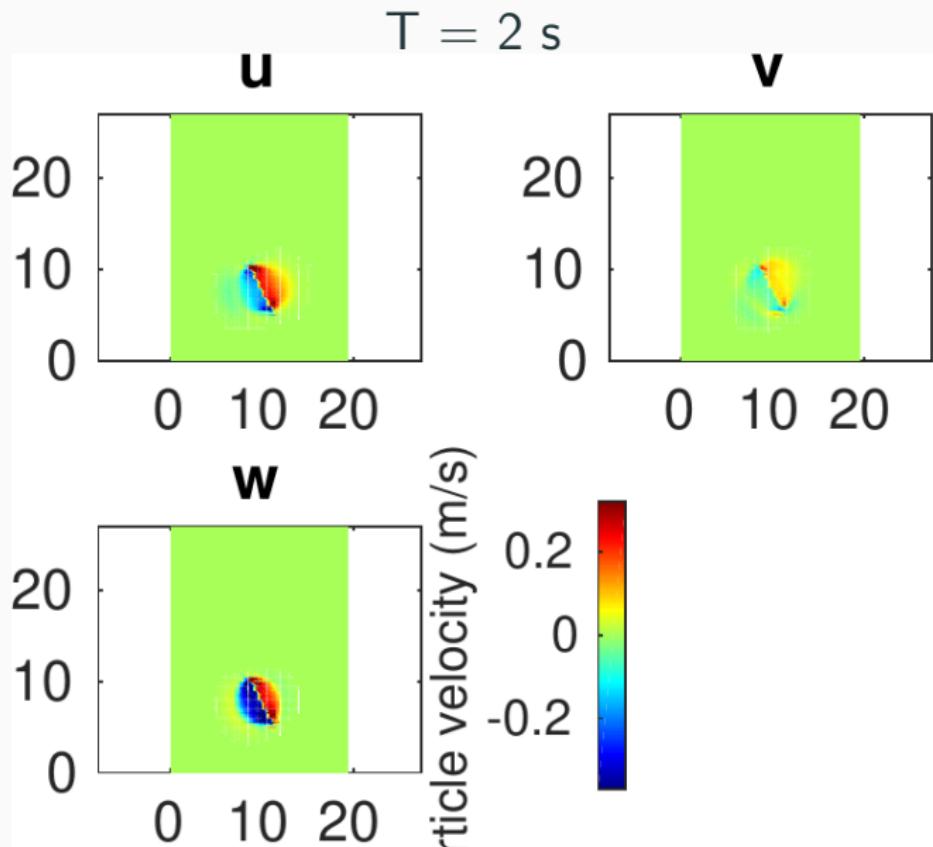
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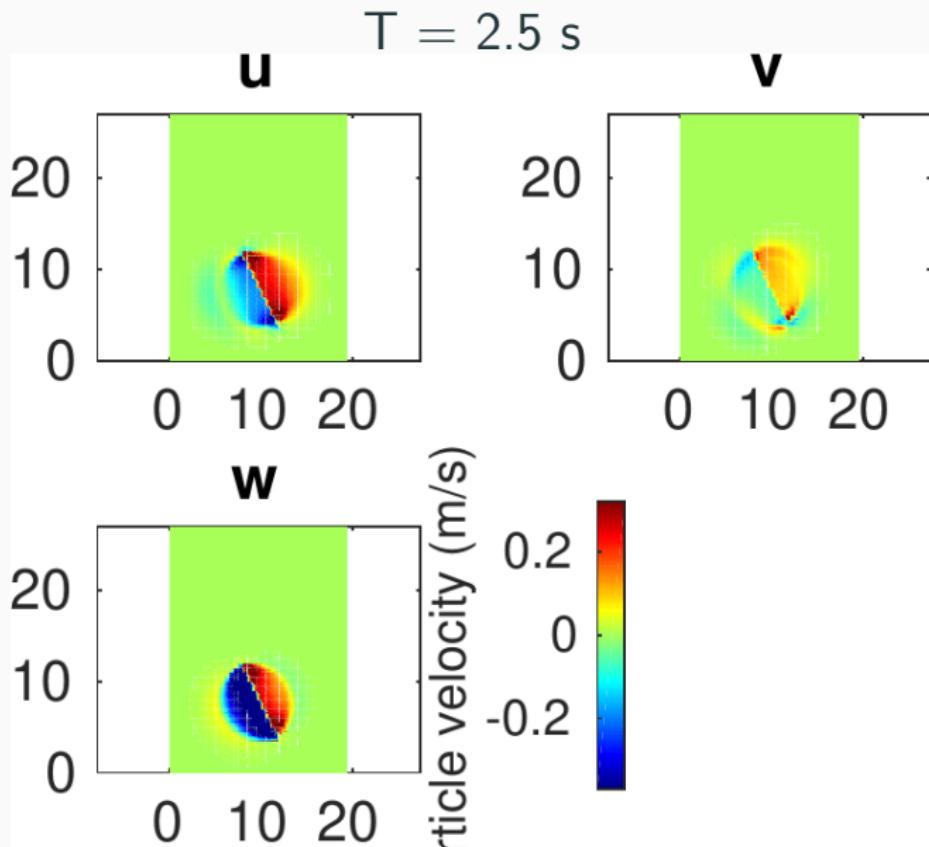
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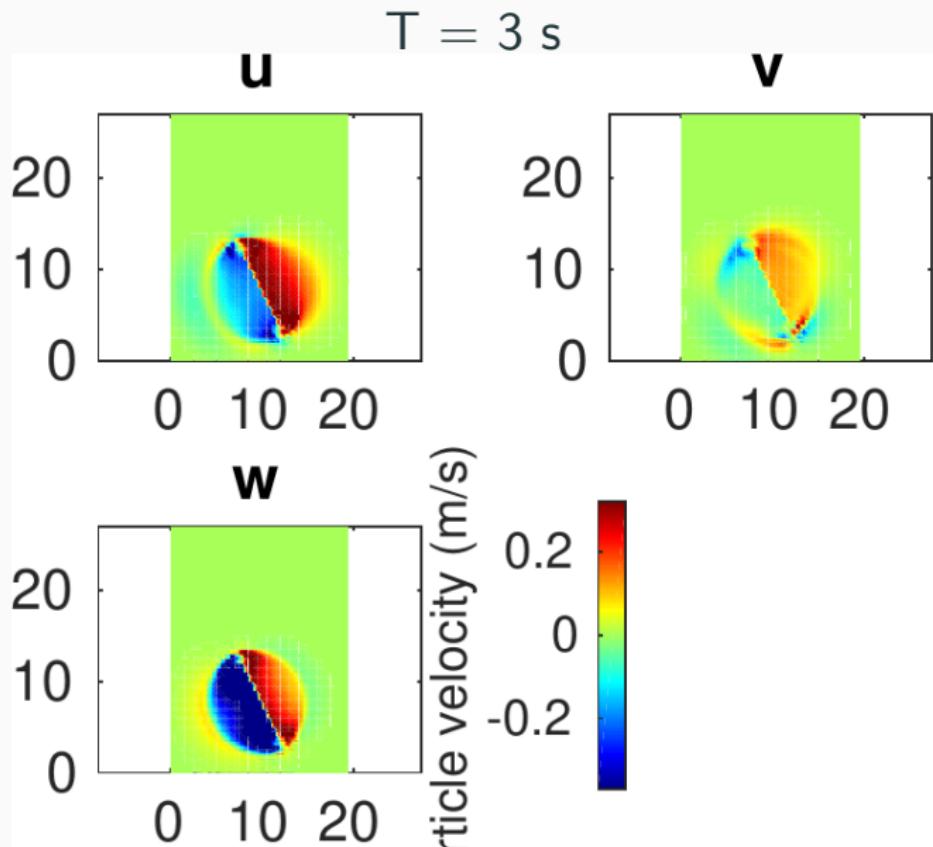
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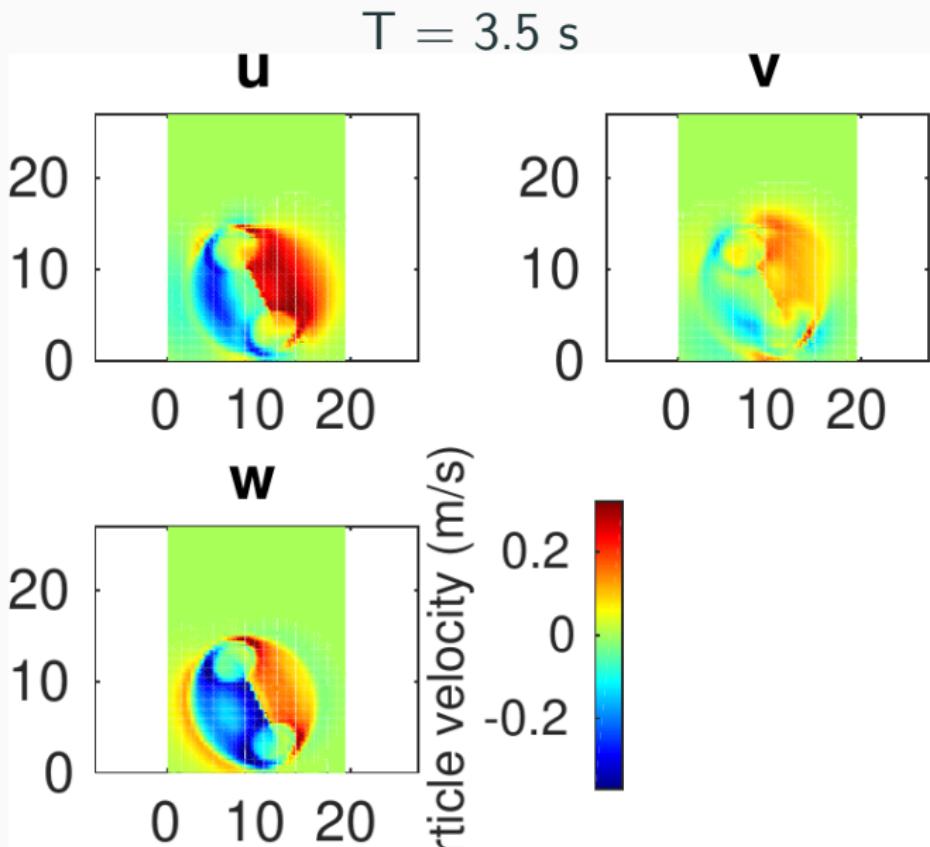
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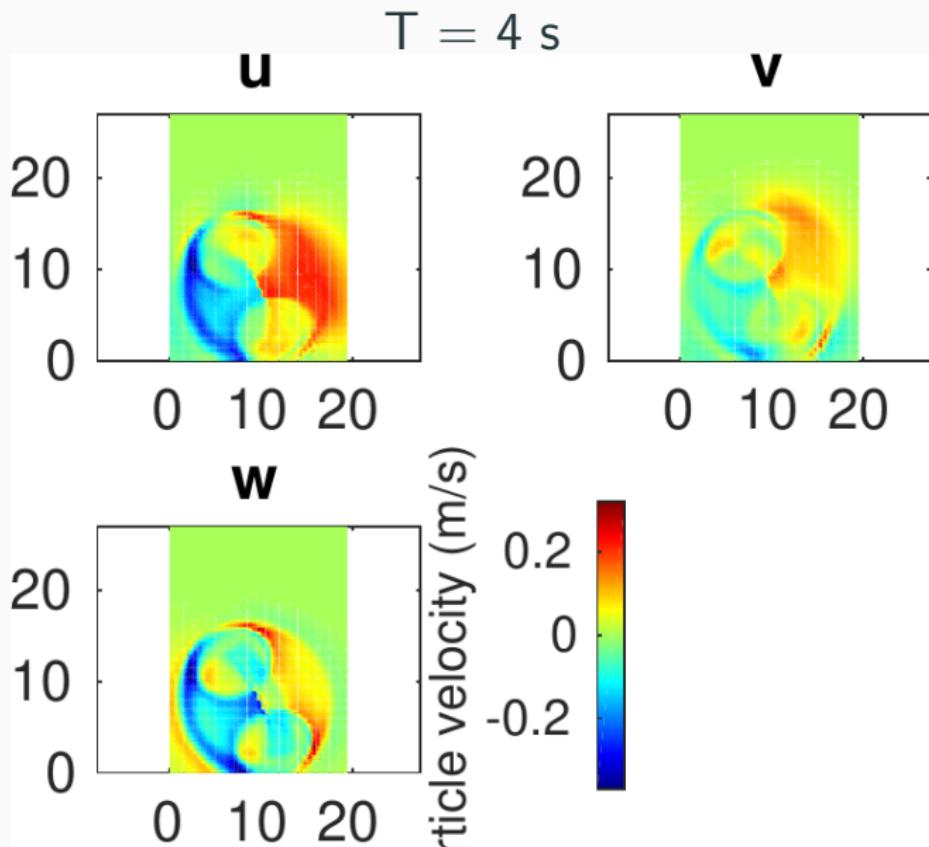
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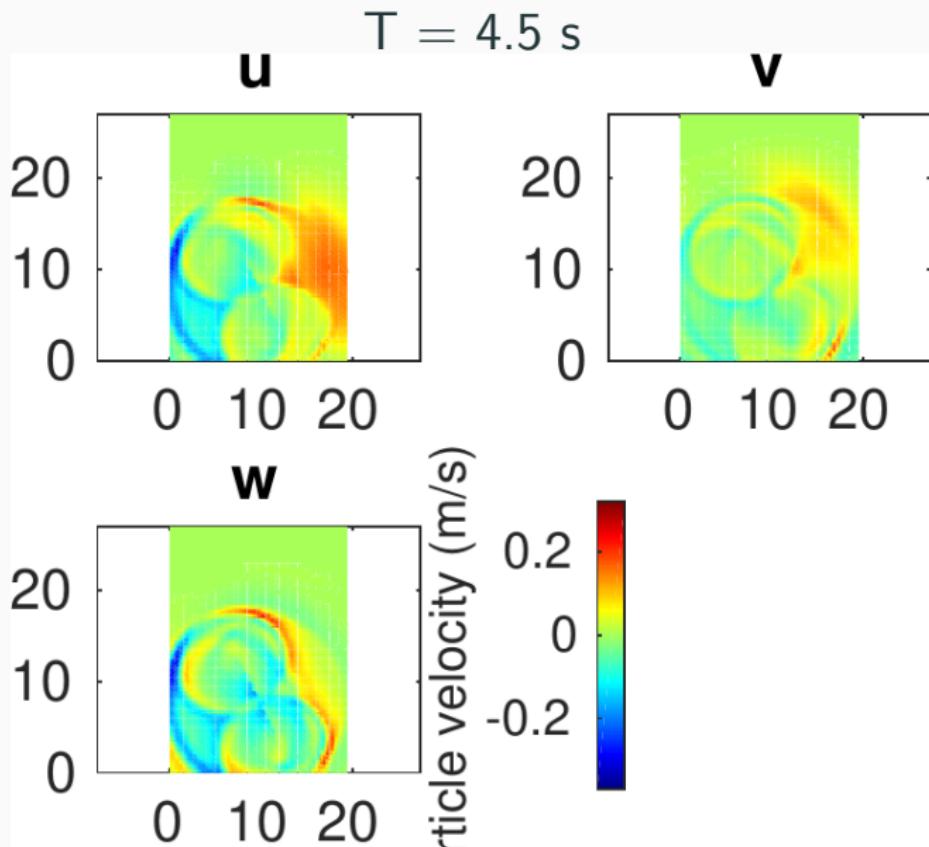
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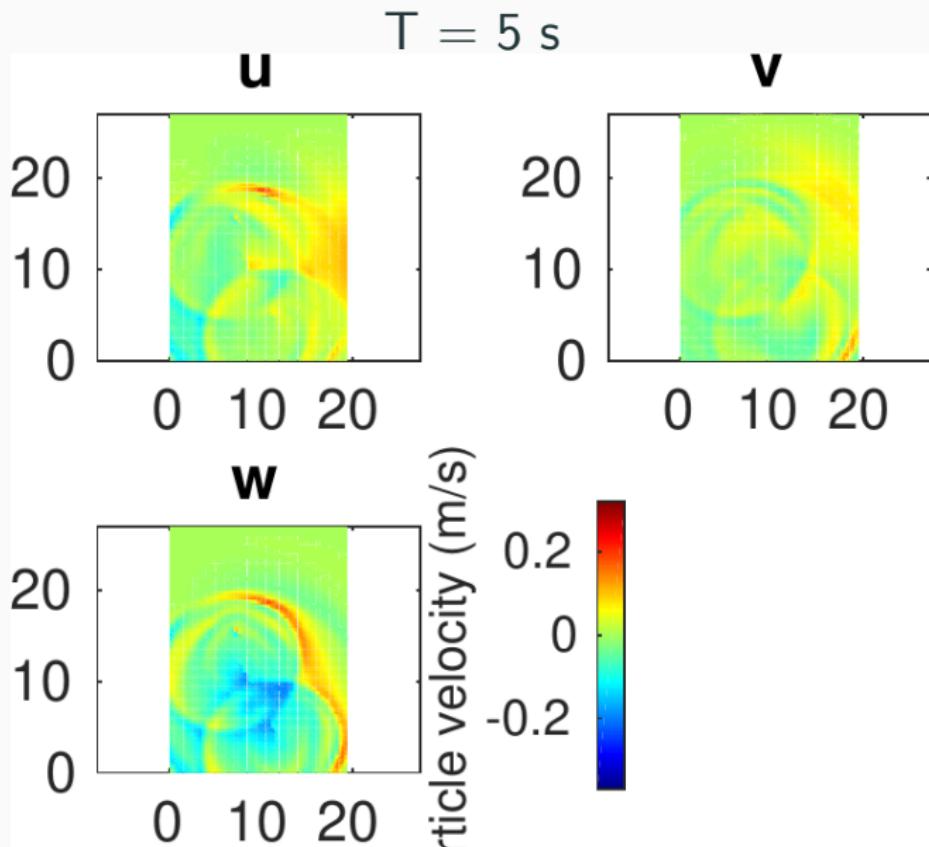
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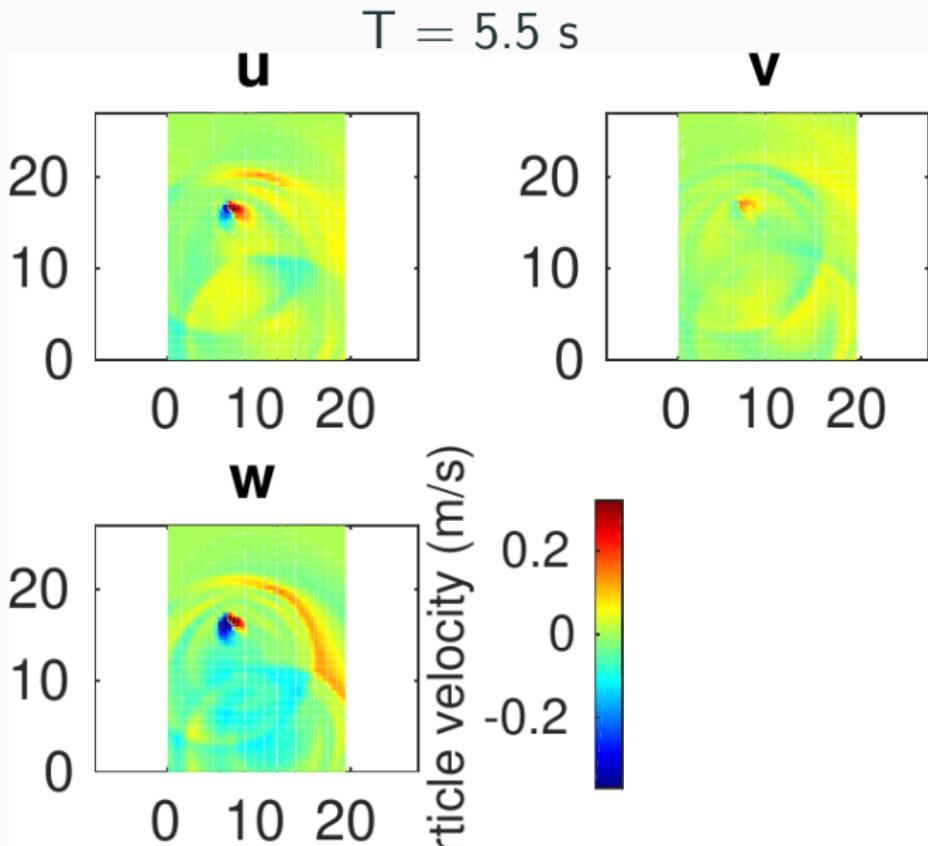
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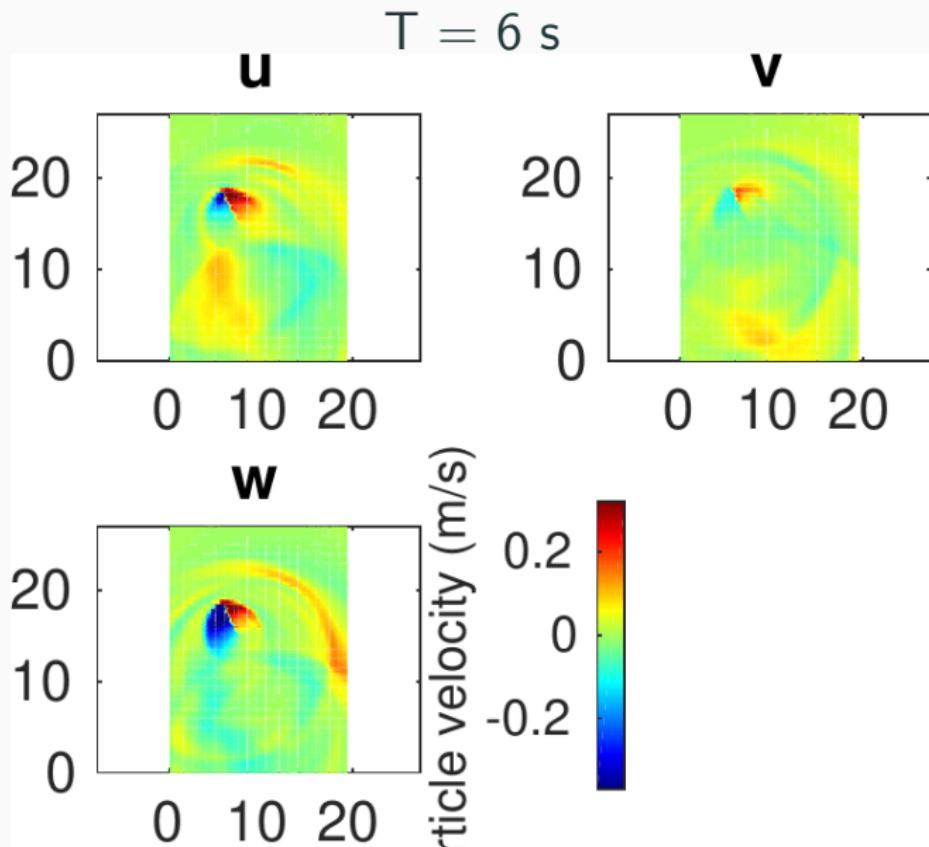
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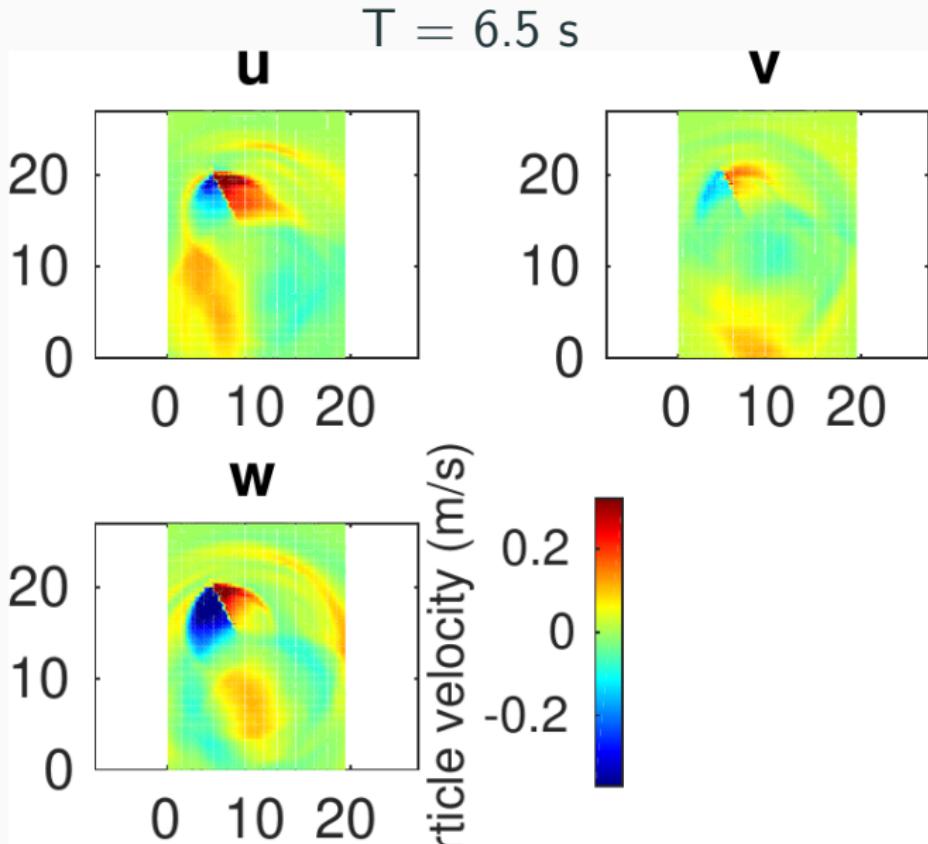
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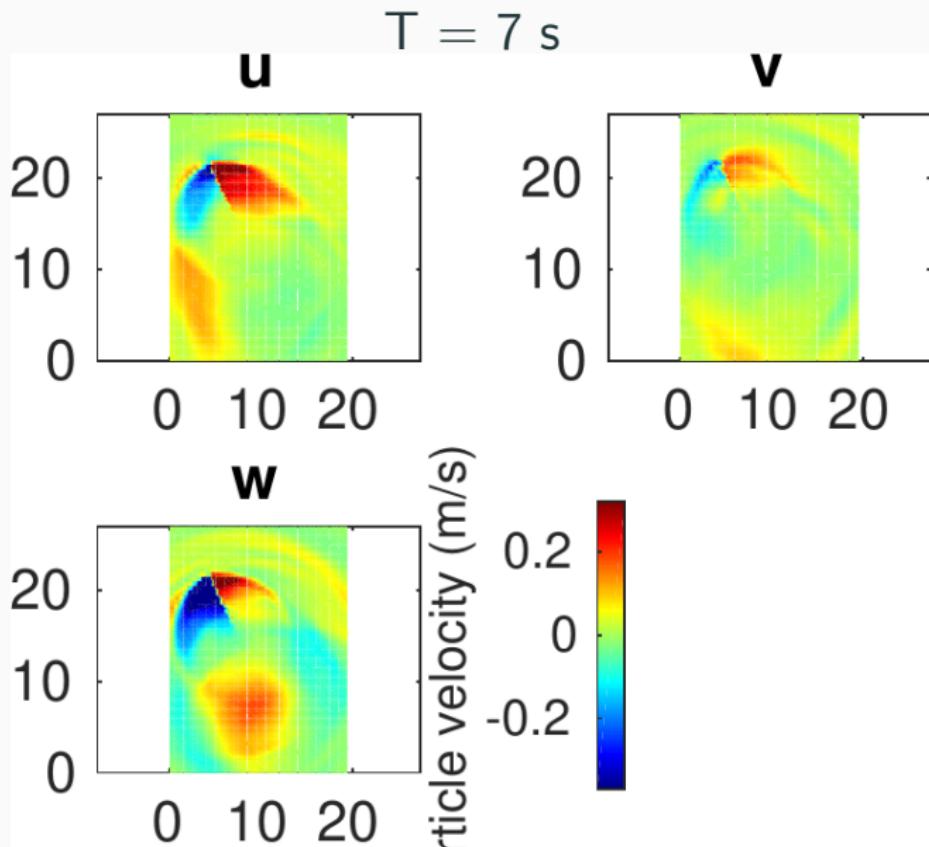
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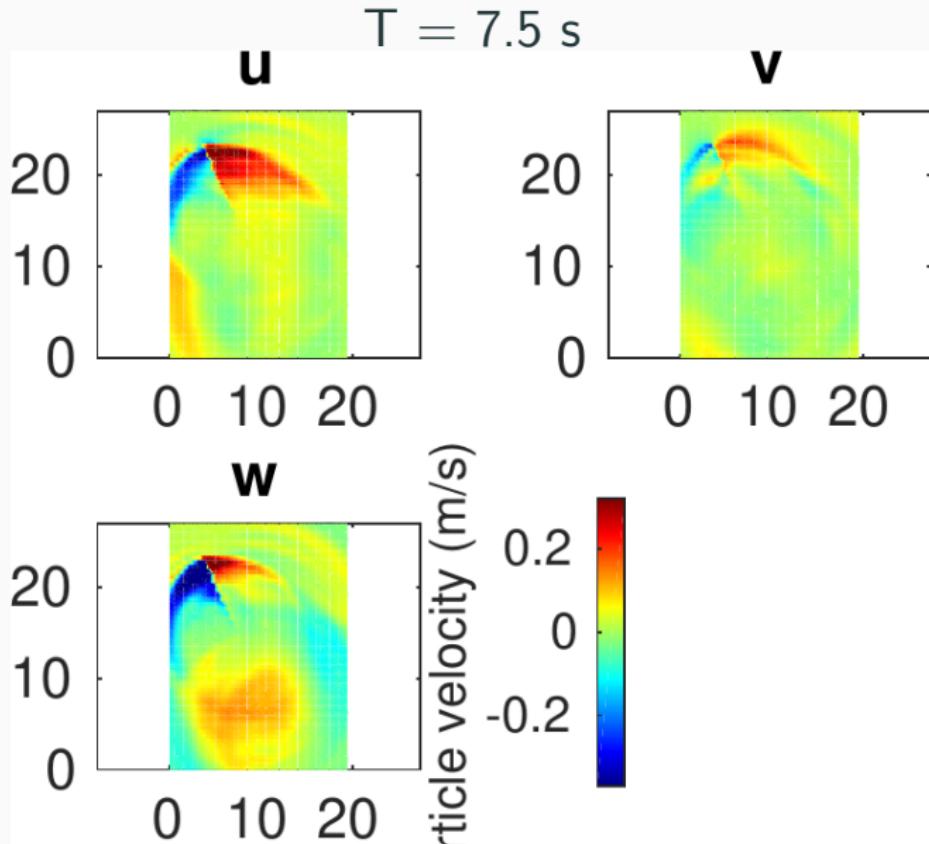
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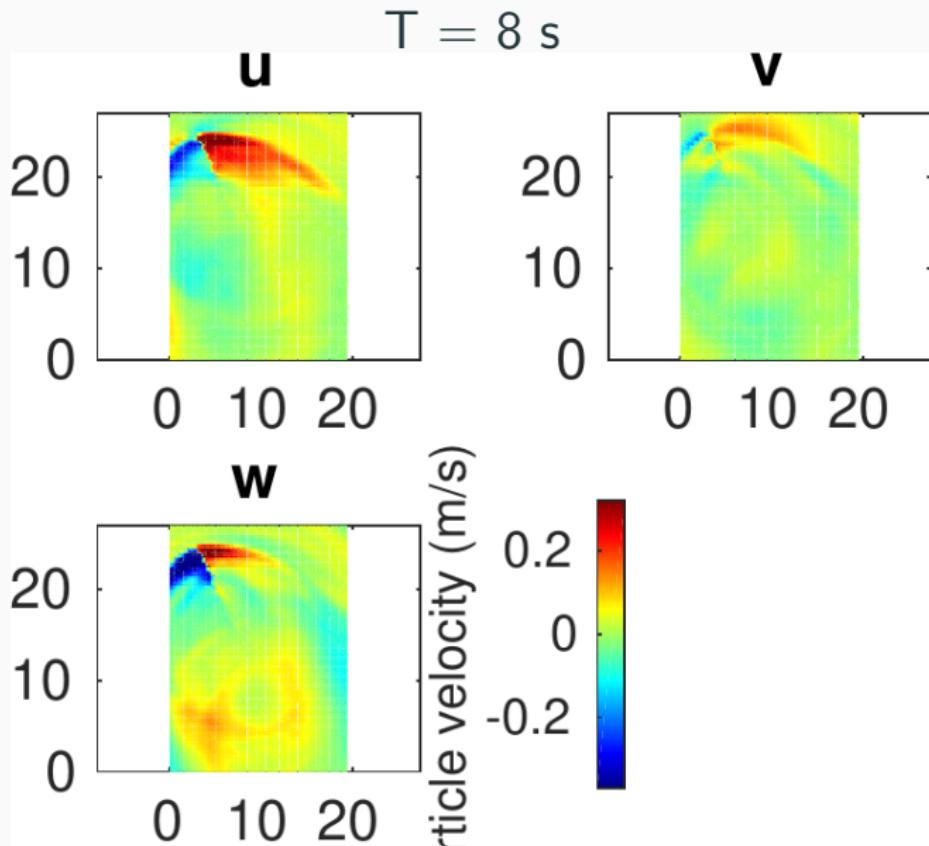
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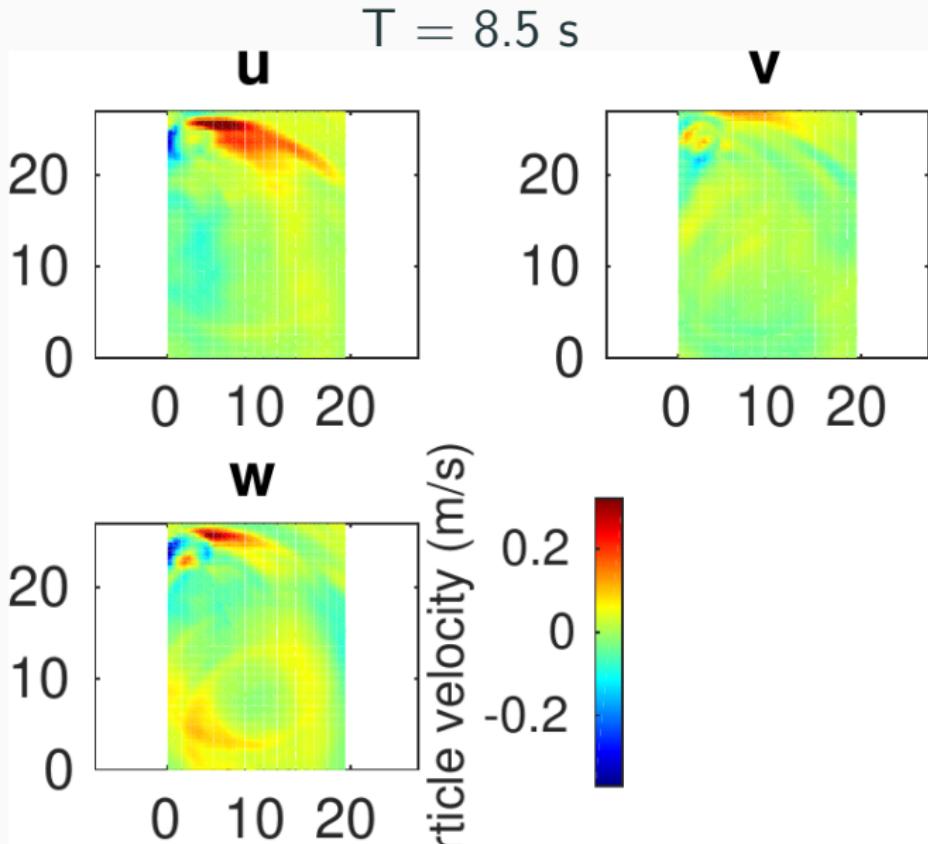
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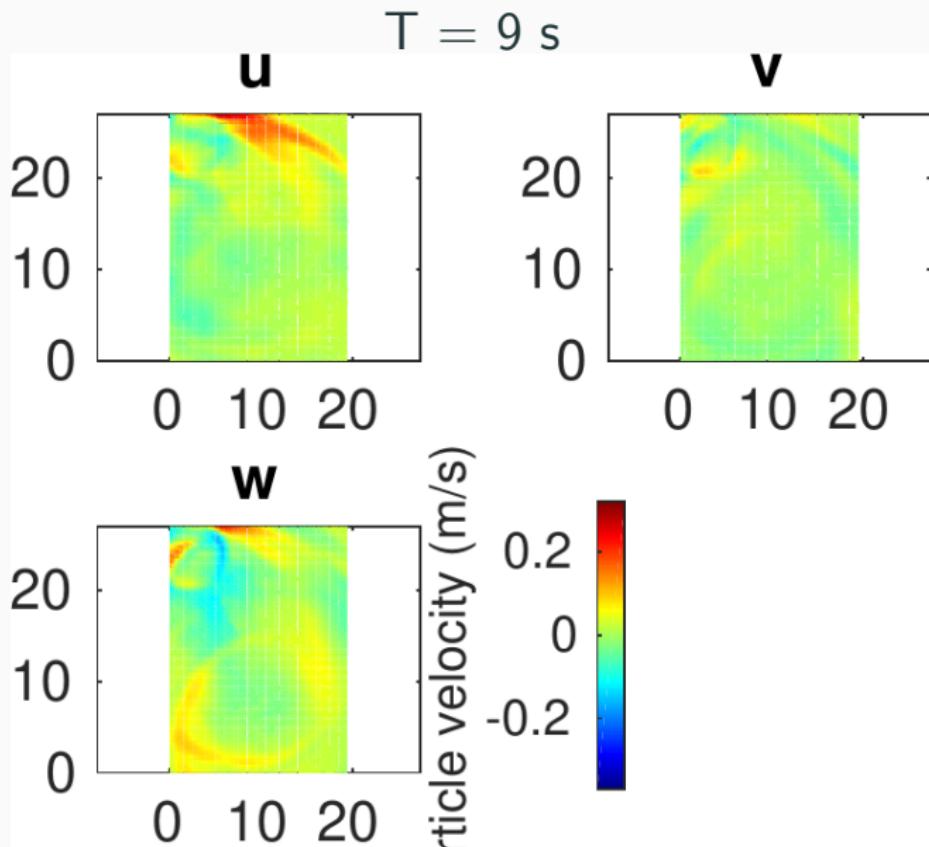
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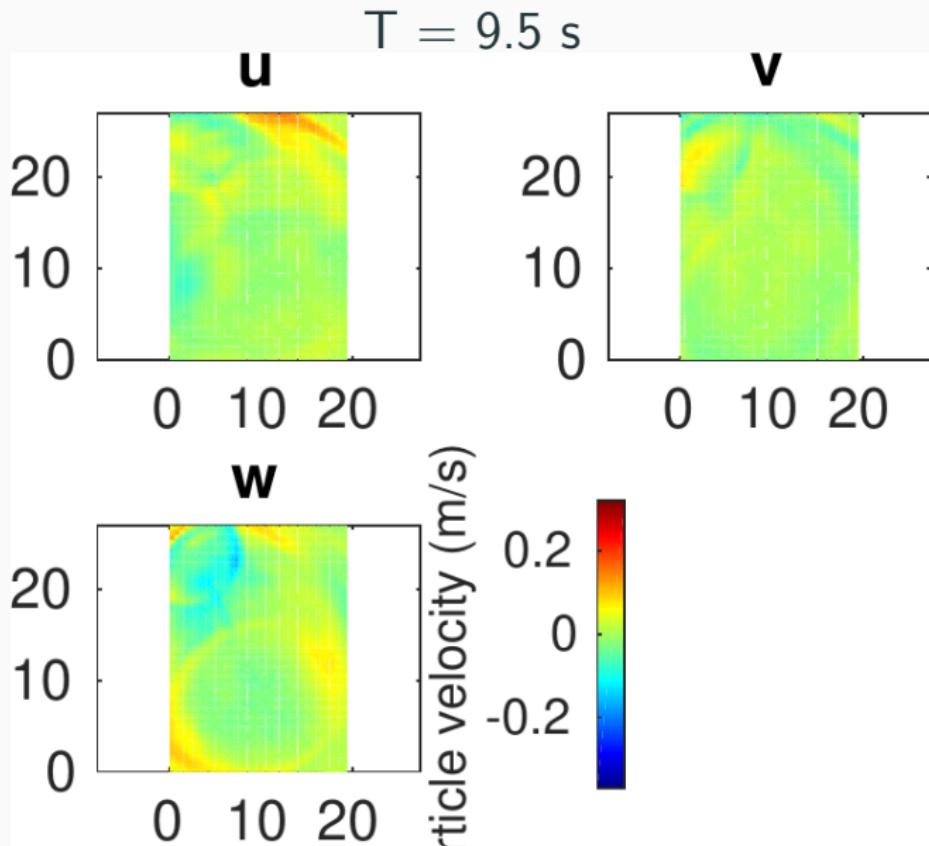
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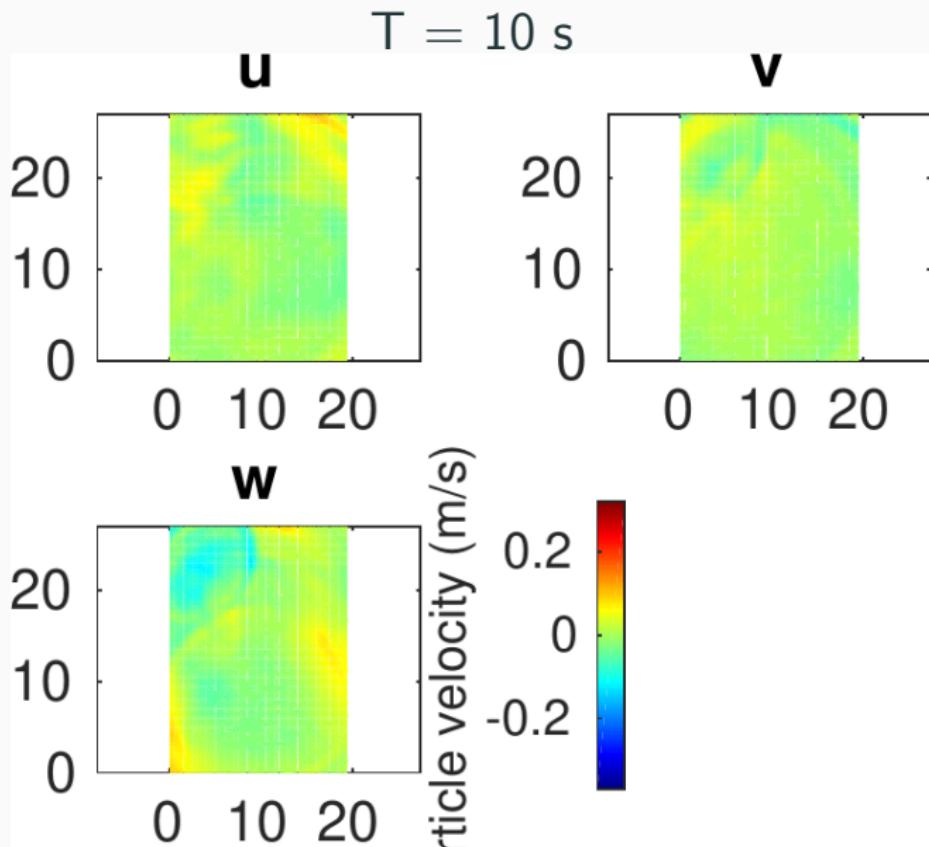
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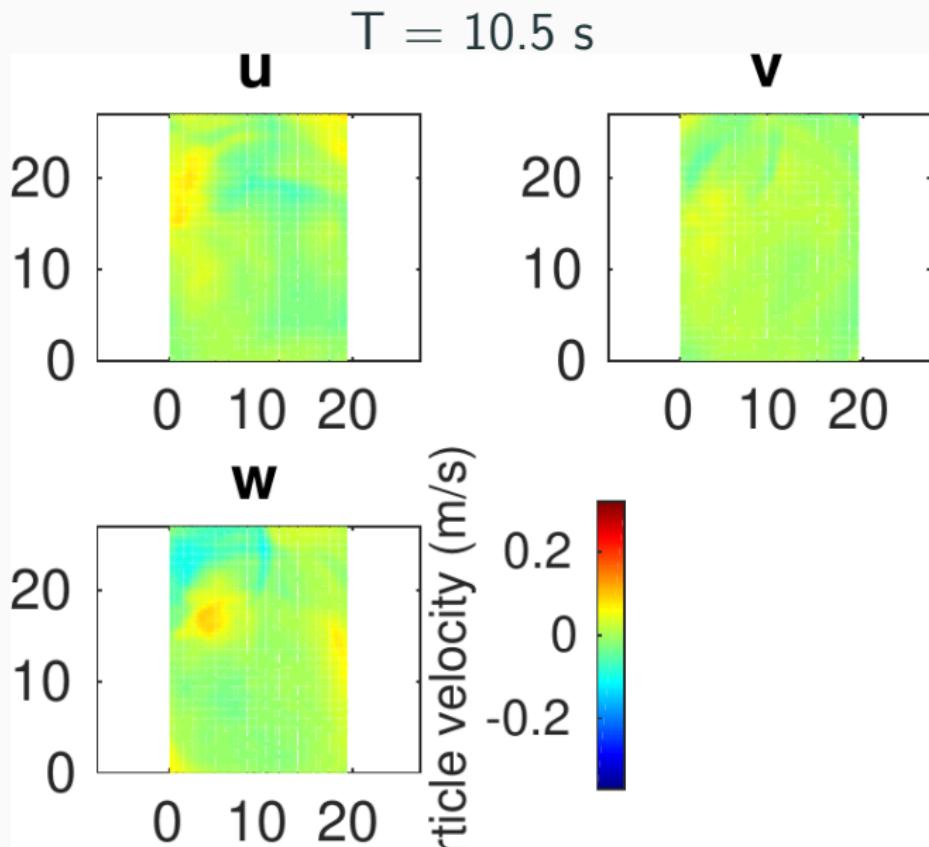
Particle velocity



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