


```

axis square
title(sprintf('iter = %d, T = %g L = %g D = %g',it,T,L,D))

if L > 1
    gr = (0:L-1) - floor(L/2-.5) - .5;
    set(gca,'XTick',gr)
    set(gca,'YTick',gr)
    set(gca,'XTickLabel',[])
    set(gca,'YTickLabel',[])
    grid on
end

```

3.2 sinemap.m

Listing 2: sinemap.m

```

function Xp = sinemap(X,T,L)

if nargin < 2, T = 1; end
if nargin < 3, L = 1; end

Xp = zeros(size(X));

Xp(:,1) = X(:,1) + T*sin(2*pi*X(:,2)/L);
Xp(:,2) = X(:,2) + T*sin(2*pi*Xp(:,1)/L);

```

References

- [1] G. K. BATCHELOR, Small-scale variation of convected quantities like temperature in turbulent fluid: Part 1. General discussion and the case of small conductivity, J. Fluid Mech., 5 (1959), pp. 113–133.
- [2] R. T. PIERREHUMBERT, Tracer microstructure in the large-eddy dominated regime, Chaos Solitons Fractals, 4 (1994), pp. 1091–1110.
- [3] W. R. YOUNG, Stirring and mixing, in Proceedings of the 1999 Summer Program in Geophysical Fluid Dynamics, J.-L. Thiffeault and C. Pasquero, eds., Woods Hole, MA, 1999, Woods Hole Oceanographic Institution. <http://gfd.whoi.edu/proceedings/1999/PDFvol1999.html>.