Tables of Variables

Space and Time Setup		
In Latex	In Matlab	Comment
N	N	Number of space points
y_{min}, y_{max}	yMin, yMax	Bounds for space interval
-	plotN	Number of plotting points
n	n	Number of time points
t_0, T	t0, TMax	Bounds for time interval

PDE Variables		
In Latex	In Matlab	Comment
ρ	rho	State variable
$\hat{\rho}$	rhoHat(intp) or target(on t_i)	the target of ρ
ρ_0	rho_ic	Initial condition for ρ
q or p	p	Adjoint variable
$\mathbf{w}$	control	Control variable
$\mathbf{w}_{Force}$	wForce	Force control
$\mathbf{w}_{Flow}$	wFlow	Flow control
V_{ext}	Vext	External Potential
f	Force	Force term in PDE

PDE Constants		
In Latex	In Matlab	Comment
β	beta	Regularization parameter
γ	gamma	Constant in front of 2 body term
D_0	D0	Diffusion constant for ρ
c_{Flow}	cFlow	Constant in front of $\mathbf{w}_{Flow}$ term
c_{ext}	cExt	Constant in front of V_{ext}
c_w	cw	Constant in front of $\mathbf{w}_{force}$
c_{Force}	cForce	Constant in front of $Force$
α	alpha	Constant in front of the Gaussian +++needs change to all 2-body parameters++

Flags and Tolerances		
In Latex	In Matlab	Comment
-	BCFlag	'Dirichlet', 'Neumann'
-	ProbType	'Forward' , MultipleShooting'
-	testFun	'AD_Dirichlet_Exact', 'AD_Neumann_Exact', 'Diffusion_Dirichlet_Exact','Diffusion_Neumann_Exact'
-	ODETols (AbsTol, RelTol)	ODE solver tolerances
-	OptiTols (OptiTol,FunTol,StepTol)	Optimization Solver Tolerances

Outputs of Matlab Code		
In Latex	In Matlab	Comment
-	rhoNumFW (TimesFW)	Solution to the forward problem (time points)
-	rhoNumOpti (TimesOpti)	Solution to the optimization problem (time points)
$\rho(t)$ $p(t)$	rhoCurrent, pCurrent	State and adjoint at time t
$\rho(\tau)$ $p(\tau)$	rhoLater, pLater	State and adjoint at time $\tau = T + t_0 - t$

Exact Solutions		
In Latex	In Matlab	Comment
-	rhoExactFW	Exact solution for forward problem
-	rhoExact	Exact solution for optimization problem
-	pExact	Exact solution for adjoint problem
-	wForceExactFW	Exact solution for $\mathbf{w}_{Force}$ in forw. prob.
-	wForceExact	Exact solution for $\mathbf{w}_{Force}$ in opti prob.
-	VextExact	Exact solution for V_{ext}
-	fExact	Exact solution for $Force$