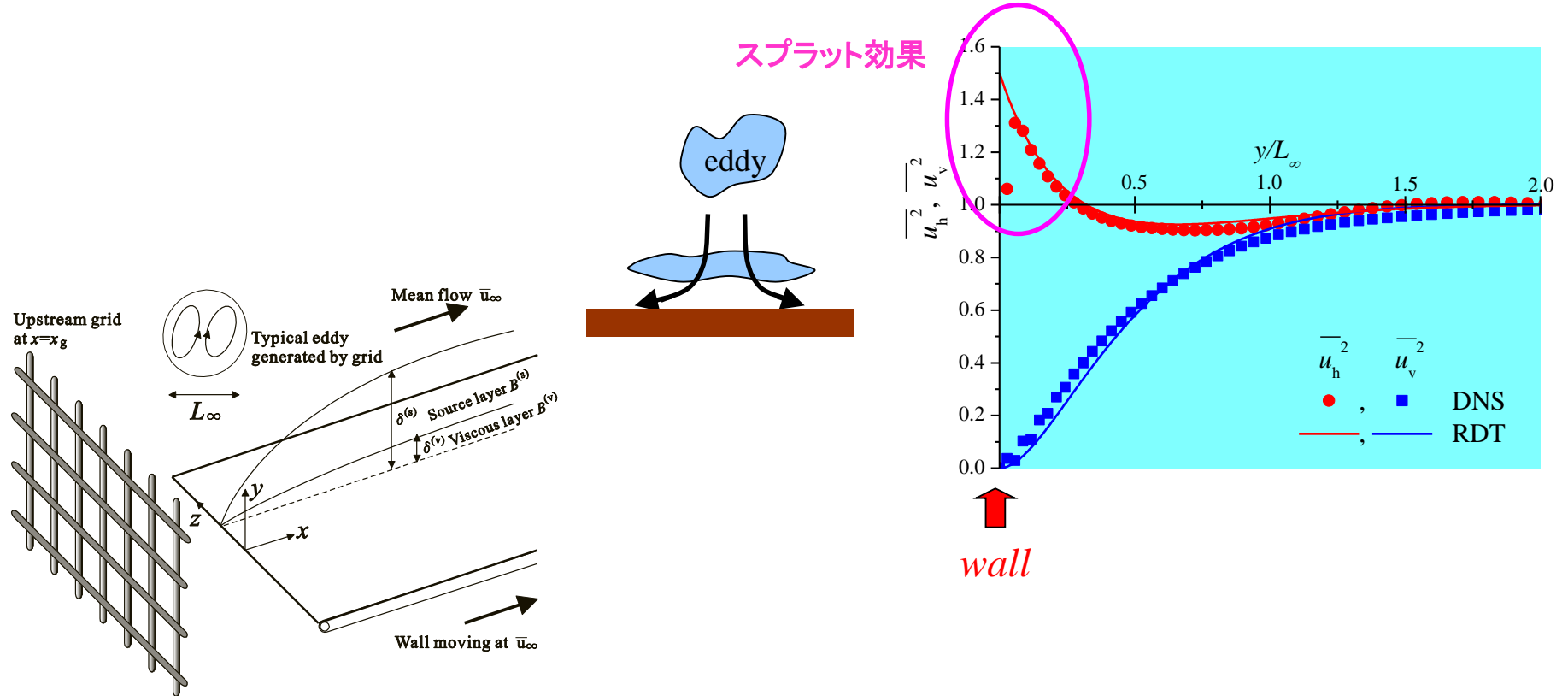


# 乱流の急激変形理論解析(RDT)

支配方程式を“急激な変形(rapid distortion)”の仮定の下線形化し、波数空間で解を求める。

適用例1: 乱流と衝撃波干渉 (「衝撃波と乱流の干渉問題」の「詳細3」を参照のこと)

適用例2: 乱流と固体壁や自由表面との干渉



解析対象: 無せん断乱流境界層

# 乱流の急激変形理論解析 (RDT)

## 適用例3: 密度成層乱流

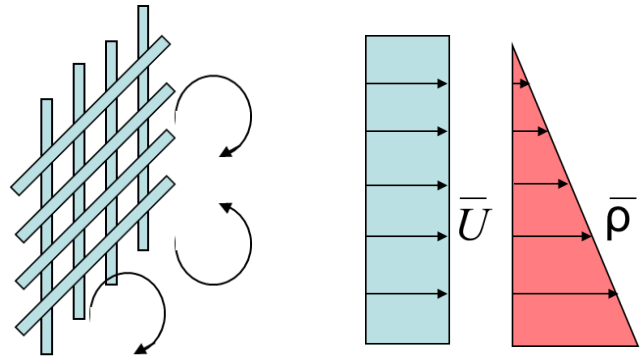
仮定:

$$t \ll T_L = L/u'$$

$$u' \ll U$$

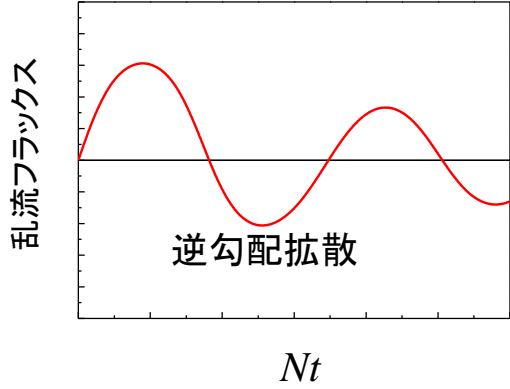
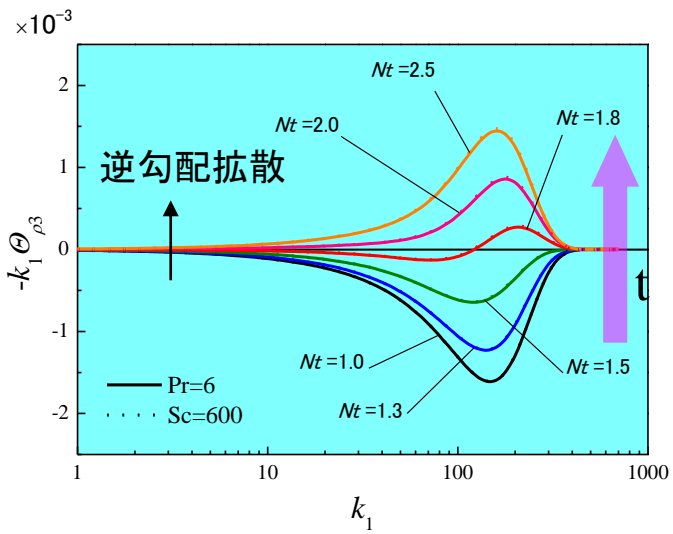
$$Re \gg 1$$

$$Fr = u'/NL \leq 1 \text{ (慣性力に比べて浮力が十分大きい)}$$



解析対象: 安定密度成層乱流

### スカラーフラックスのコスペクトル 液相温度成層, 塩水成層 (Pr=6, Sc=600)



逆勾配拡散が小スケール域から発生する → 実験と一致

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