Introduction and Literature Survey
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?
$y_1(t)$
$y_2(t)$
$(0, T)$
$x(t)$
$y_2(t)$
α
ν

$$y_1(t) = x(t) + n_1(t) \quad (1)$$
$$y_2(t) = \alpha x(t+\tau) e^{2\pi j \nu (t+\tau)} + n_2(t)$$

$$R(\tau, \nu) = \left| \frac{1}{T} \int e^{-2\pi j f \tau} Y_1^*(f-\nu) Y_2(f) df \right| \quad (2)$$

$$R(\tau, \nu) = \left| \frac{1}{T} \int e^{-2\pi j \nu (t+\tau)} y_1^*(t+\tau) y_2(t) dt \right| \quad (3)$$

$$R(\tau, \nu) = \left| \frac{1}{N} \sum_{n=0}^{N-1} e^{-2\pi j \nu t_{n+m}} y_1^*[n+m] y_2[n] \right| \quad (4)$$

$m = \lfloor \tau F_s \rfloor$
N
$t_{n+m} = \frac{1}{F_s}(n+m)$
F_s
??
$_s$*cenario.eps*
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$\hat{T}_{i,j}$
$T_{i,j}$
$\vec{p}$
$\vec{p}_\ell$
$T(\vec{p})$

$$T(\vec{p})_{i,j} = \frac{1}{C}\|\vec{p}_i - \vec{p}\| - \frac{1}{C}\|\vec{p}_j - \vec{p}\| \quad (5)$$

$T(\vec{p})_{i,j}$
$\vec{p}$

$$C_{TDOA}(\vec{p}) = \sum_{i=1}^{L} \sum_{j=1}^{L} w_{i,j} (T(\vec{p})_{i,j} - \hat{T}_{i,j})^2 \quad (6)$$

$w_{i,j}$
W
$\hat{\vec{p}}$

$$\hat{\vec{p}} = argmin_{\vec{p}} C_{TDOA}(\vec{p}) \quad (7)$$

ℓ

$$FIM_{\ell,\ell} = \frac{2}{\sigma_\ell^2} \left\| \frac{\partial \mathbf{m}_\ell}{\partial T_\ell} \right\|^2 \quad (8)$$

σ_ℓ^2
$\mathbf{m}_\ell$
$\mathbf{m_l}$