Consider the regression model

$$y = g(x^*, t) + v,$$

with a measurement of unobserved $x^*$ given by $\tilde{z} = x^* + \tilde{u}$, with $x^* \perp \tilde{u}$ conditionally on $t$. Assume that $E(\tilde{u}|t) = 0$ and that $E(v|x^*, t) = 0$. Then redefining all the densities and conditional expectations to be conditional on $t$ we get the same system of convolution equations as in Table 2 for model 5 with the unknown functions now being conditional densities and the regression function, $g$.

Conditioning requires assumptions that provide for existence of conditional distribution functions in $S^*$.

# 3 Solutions for the models.

## 3.1 Existence of solutions

To state results for nonparametric models it is important first to clearly indicate the classes of functions where the solution is sought. Assumption 1 requires that all the (generalized) functions considered are elements in the space of generalized functions $S^*$. This implies that in the equations the operation of convolution applied to the two functions from $S^*$ provides an element in the space $S^*$. This subsection gives high level assumptions on the nonparametric classes of the unknown functions where the solutions can