(b), though, a different solution is given here. Thus identification requires differentiability of either γ or ϕ; when γ is not differentiable and the result in Cunha et al does not hold identification is still possible in case (b). This also extends the identification result of Evdokimov 2010.

3 Well-posedness

We now consider whether when the distributions of the observables are close the unknown functions are also necessarily close.

A sufficient condition is provided in Zinde-Walsh 2010 (Theorem 4). When identification is based on (b) of Theorem 1 here the model class needs to be restricted to include only measurement error distributions with ϕ^{-1} in $\Phi(m, V)$ for some m, V. Equivalently, when identification is based on (a), the sufficient condition is for the class of models to be restricted to those where the latent factor distribution is such that $\gamma^{-1} \in \Phi(m, V)$.

These conditions exclude models where both g and f are supersmooth with supp(γ) unbounded leading to a supersmooth distribution for w_1. Although these conditions are only shown to be sufficient, an example below (from Zinde-Walsh 2009 and 2010) demonstrates that a Gaussian distribution (that violates these conditions) fails well-posedness in the weak topology of generalized functions in S' and therefore in any stronger topology or metric (uniform, $L_1, etc.$).

Example 4. *Consider the function* $\phi(x) = e^{-x^2}$, $x \in R$. *Consider in* S