Errata to "Asymptotic Statistics" by A.W. van der Vaart, printing 2000.

(last updated, June 2021)

I thank all people who pointed out mistakes, and in particular Shota Gugushvili. Mistakes in the hard cover version of 1998 that were corrected in the 2000 printing, are not listed here.

7,-16 REPLACE By (iv) BY By (v).
7,-18 REPLACE by (v) BY by (vi).
17 REPLACE "if and only if" in the statement of Theorem 2.20 BY if.

[The converse (non-proven) part of the theorem is valid if f is nonnegative, but not for general f. More generally, if $\mathrm{E}|f(X_n)| \to \mathrm{E}|f(X)|$, then the sequence $f(X_n)$ is uniformly integrable. This can be proven by using an almost sure construction with $\mathrm{E}|f(\tilde{X}_n) - f(\tilde{X})| \to 0$. For a counterexample against the converse statetement for general f, let $X_n = -n, 0, n$ with probabilities $1/n, 1-2/n, 1/n$. Then $X_n \rightsquigarrow 0$ and $\mathrm{E}X_n = 0$ for every n, but $\mathrm{E}|X_n|1_{|X_n|>M} = 2$, for every $n > M$, and hence tends to 2, as $n \to \infty$.]

30,-14 Remove the first occurrence of "variance-stabilizing transformation.".
30,-7 REPLACE $\sqrt{n}(r-\rho)$ BY $\sqrt{n}(r_n-\rho)$. [Also replace r by r_n on page 31, three times.]
31 In Figure 3.1 the sample size was 25. The horizontal scale in the histogram on the right is incorrect (the shape looks ok).
51,+9 REPLACE often a normal distribution BY often to a normal distribution.
51,-9 REPLACE $\ddot{\psi}_n(\tilde{\theta}_n)$ BY $\ddot{\Psi}_n(\tilde{\theta}_n)$.
68,+9 REPLACE there exists a (random) vector $\tilde{\theta}_n$ on the line segment between θ_0 and $\hat{\theta}_n$ BY there exist (random) vectors $\tilde{\theta}_n$ on the line segment between θ_0 and $\hat{\theta}_n$ (possibly different for each coordinate of the function Ψ_n)

[In the proofs of Theorem 5.41 and 5.42 for a parameter of dimension bigger than one, the vector $\tilde{\theta}$ must be understood to be different for different coordinates of the functions Ψ_n or $P\psi_\theta$, as a Taylor expansion with an intermediate point in the remainder works for a real function. Because all the estimates can be understood coordinatewise, this does not affect the proofs.]

69,+4 REPLACE for a point $\tilde{\theta} = \tilde{\theta}(x)$ on the line segment between θ_0 and θ BY for points $\tilde{\theta} = \tilde{\theta}(x)$ on the line segment between θ_0 and θ (possibly different for each coordinate of the function $\theta \mapsto P\psi_\theta$)
72 In first display of the proof remove $\dot{\Psi}_{n,0}^{-1}$.
73 In first display of the proof remov the inverse sign $^{-1}$.
74 REPLACE in display $\dot{\ell}_\theta$ by $\ddot{\ell}_\theta$.
75,-4 REPLACE $\sup_{d(\theta,\theta_0)<\delta} P(m_\theta - m_{\theta_0})$ BY $\sup_{\delta/2<d(\theta,\theta_0)<\delta} P(m_\theta - m_{\theta_0})$ or replace the condition by $P(m_\theta - m_{\theta_0}) \leq -Cd(\theta,\theta_0)^\alpha$.
86,-13 REPLACE (22.30) BY (6.1).
86,-2 REPLACE (22.30) BY (6.1).
87,-2 REPLACE identify BY identity.
103,-6 REPLACE third Example 6.7 BY third lemma, Example 6.7,
106 REPLACE Its definition BY The definition.
109 In the caption of Figure 8.1 REPLACE Quadratic risk function BY Risk function $\theta \mapsto n\mathrm{E}_\theta(S_n-\theta)^2$.
128,+9 REPLACE $h^TJh)$ BY h^TJh.
141 At the very end of the text of the statement of Theorem 10.1, before the last display, add: ", with $\|\cdot\|$ the total variation norm,".
150,+3 REPLACE (15.9) by (10.11). [Do the same in lines +11 and +18.]

168,+10 REPLACE $\mathbb{P}_n \to$ BY $\mathbb{P}_n f \to$.
187 REPLACE $a_N, R_{N,i}$ BY $a_{N,R_{N,i}}$.
209,+8 REPLACE is sandwiched BY are sandwiched.
228,+14 REPLACE μ_θ BY θ.
228,+18 REPLACE $\psi(0)$ by $\psi(\theta)$.
231,-11 REPLACE $\dot\ell_{\hat\theta_{n,0,>l}}$ BY $\dot\ell_{\hat\theta_{n,0},>l}$.
231,-10 REPLACE $\hat\theta_{n,o}$ BY $\hat\theta_{n,0}$.
238,-2 REPLACE The claim in the Section 16.4 BY The claim in Section 16.4.
254,+2 REPLACE Suppose that X BY Suppose that Y.
257 REPLACE last sentence of Example 18.5 BY The space $\ell^\infty(T)$ is separable if and only if T is finite.
258,-9 REPLACE convergence of probability BY convergence in probability.
262 In the proof of Theorem 18.14 it may be remarked that the process X that is constructed is tight in the space $UC(T,\rho)$.
[Any Borel measurable element in a complete separable metric space is tight.]
278 In the first line REPLACE $\int z^2(t)\,dt$ BY $\int z^2(t)\,dF(t)$.
308 Print the first paragraph (remaining part of Corollary 21.5) in slanted font.
330,+8 Remove the (second, orphan) bracket] at the end of the sentence.
332 In the last display add an absolute value sign between $\mathrm{E}h(G)$ and $\to$.
362,-8 REPLACE Ph^2 is automatically BY Pg^2 is automatically.
386,+3 REPLACE section BY Section.
394 In the middle of the page REPLACE (see [139], p.185]). Under BY (see [139], p.185. Under .
423 In the first line of Lemma 25.92, REPLACE $\ell^\infty(\mathcal{L})$ by $\ell^\infty(\mathcal{Z})$.
425,+16 REPLACE true conditional distributions of T and C given Z possess continuous Lebesgue densities BY true conditional distribution of T given Z possesses a continuous Lebesgue density.