

Model	Fuel Moisture	Fuel Load	Fire starts from lightning Ignitions	Anthropogenic Ignitions	Anthropogenic Suppression	Rate of Spread (ROS)	Burnt Area
CASA/GFED	None. Fire translated to burnt area from satellite fire counts.						Proportional to no. of fires, with more burnt area to fire in sparse vegetation (<i>van der Werf, 2003</i>)
GLOBFIRM	Moisture of extinction, above which fire does not occur (<i>Thonicke et al. 2001</i>)	Discontinuity fuel load threshold, below which fire does not occur (<i>Thonicke et al. 2001</i>)			Suppression from Reduced fuel from grazing (<i>Krinner et al. 2005</i>)		Increases exponentially with annual (<i>Thonicke et al. 2001</i>) or monthly (<i>Krinner et. al. 2005</i>) summed fire occurrence.
	Increased fire occurrence with decrease moisture (<i>Thonicke et al. 2001</i>)	Reduced fuel from grazing (<i>Krinner et. al. 2005</i>)					
SIMFIRE	Maximum possible burnt area a function of FDI (<i>Knorr et al. 2014</i>)	Maximum possible fire as a function of fAPAR as proxie for fuel load (<i>Knorr et al. 2014</i>)			Increases exponentially with population (<i>Knorr et al. 2014; Knorr et al. 2016</i>)		Multiplication of maximum fire functions for fuel, moisture & suppression (<i>Knorr et al. 2014</i>).
P&S	Function of VPD (proxy for ambient atmospheric conditions) (<i>Pechony & Shindell, 2009</i>)	Fire scaled by vegetation density based on LAI (<i>Pechony & Shindell, 2009</i>)	Observed lightning flash count, scaled for cloud-to-ground (CG) ratio (<i>Pechony & Shindell, 2009</i>)				
			Rate of Spread Models				
MC-FIRE	Calculated from fuel size classes and live fuel component (<i>Lenihan et al. 1998</i>).	Size ratios effects RoS (<i>Rothermel 1972</i>)	Fire only occur when 1000hr hour fuel content drops below threshold and rate of spread is above a threshold (<i>Lenihan et al. 1998</i>)		Capped burnt area for low intensity or slow spread rate fires in populated areas (<i>Rogers et al. 2011</i>)	Fire behaviour scaled by fuel load and moisture based Fire Danger Index (FDI) based rate of spread for ground (<i>Rothermal 1972; Lenihan et al. 1998</i>) and crown (<i>Van Wanger, 1993</i>) fires	Entire grid cell affected by fire during fire occurrence (<i>Lenihan et al. 1998</i>)
	Effects fire start (<i>Lenihan et al. 1998</i>) and RoS (<i>Rothermel 1972</i>)						
CTEM	Represented by soil moisture (<i>Arora & Boer 2005; Melton & Arora 2016</i>)	Linear increase fire occurrence between discontinuity and saturated fuel thresholds (<i>Arora & Boer 2005</i>)	Probability of fire occurrence a multiple of probabilities from fuel, moisture & ignitions (<i>Arora & Boer 2005</i>).	Deforestation fire (<i>Kloster et al. 2012</i>)	No. of days fire burnt suppressed at higher population density (<i>Melton & Arora 2016</i>)	No FDI (<i>Arora & Boer 2005</i>)	Maximum of 1 fire per sub-grid cell unit. Overall burnt area in grid cell is multiplication of probability of fire by number of units by average fire size per unit (<i>Arora & Boer 2005; Melton & Arora 2016</i>)
			Latitude dependant CG scaling for lightning (<i>Kloster et al. 2012</i>)			Affected by differing fuel types (<i>Arora & Boer 2005</i>)	
Li et al.	Represented by soil moisture &relative humidity (<i>Li et al. 2012</i>)		Ignitions & limitation from fuel and moisture (<i>Li et al., 2012</i>)	Deforestation & degradation fires in tropical closed forests (<i>Li et al. 2013</i>)	Suppression increases with GDP (<i>Li et al. 2013</i>)		
REGFIRM	Fire occurrence from moisture based FDI (<i>Venesky et al. 2002</i>)		Number of fires instead of probability of fire (<i>Venesky et al. 2002</i>)	'Human ignition potential'(HPI) (<i>Venesky et al. 2002</i>)		Variable wind speed affects rate of spread and fire oval shape (<i>Venesky et al. 2002</i>)	Number of fire multiplied by average area burnt per fire (<i>Venesky et al. 2002</i>)
SPITFIRE/ LPX/Lmfire			CG distributed between wet and dry lightning (<i>Prentice et al. 2011</i>)	HIP varying with socio-economic development (<i>Thonicke et al. 2010</i>)	Cropland fire masking (<i>Thonicke et al. 2010</i>)	Multi-day fires (<i>Pfeiffer et al. 2013</i>)	
			"Storm days" (<i>Kelley et al. 2014</i>)		Additional ignition suppression term (<i>Thonicke et al. 2010</i>)	Different RoS for different vegetation type (<i>Pfeiffer et al. 2013</i>)	
			Inter-annual lightning from atmospheric conditions (<i>Pfeiffer et al. 2013</i>)	Different human-fire relation for hunter-gatherers, pastoralists and farmers (<i>Pfeiffer et al. 2013</i>)	Explicit cropland fragmentation algorithm (<i>Pfeiffer et al. 2013</i>)	Terrain impediment to spread (<i>Pfeiffer et al. 2013</i>)	
						Reduced rate of spread at high wind speeds (<i>Lasslop et al. 2014</i>)	

